May 9, 1936

Railway Age

Founded in 1856

Equipment Orders Passing Last Year's Twelve Months Total

ORDERS for locomotives, passenger cars, freight cars and rail for the first four months of 1936 compare favorably with orders for the entire twelve months of 1935, as indicated by the summary of orders presented in the news columns of this issue of the RAILWAY AGE.

This shows that the railways are giving attention to much needed modern equipment and materials, and, given a respite from adverse legislation and with a continued increase in traffic, they can, through greater purchases, materially contribute to further increased activity and employment in the durable goods industries.

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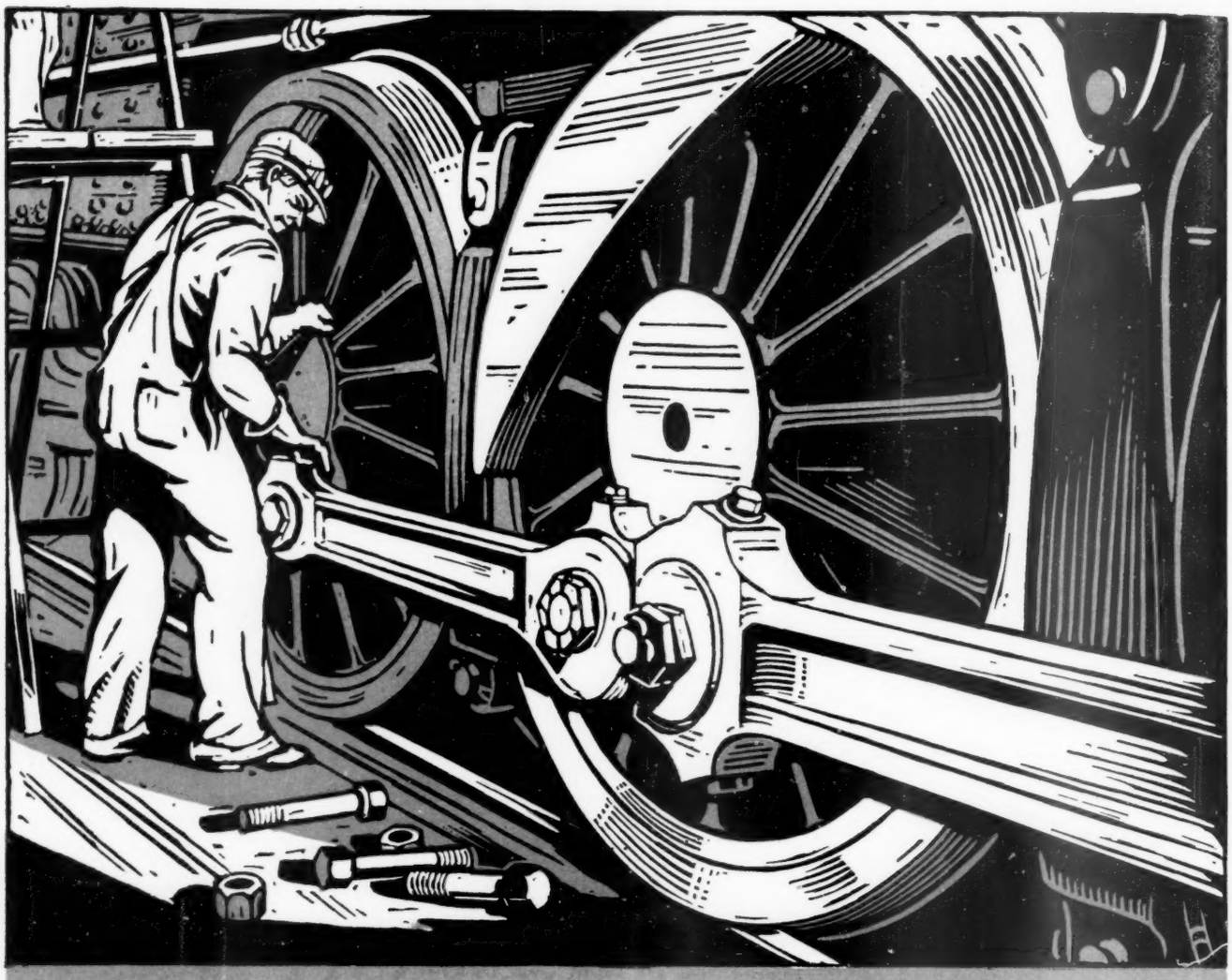

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RAILWAY AGE

Proposed Taxes and Capital Goods Industries

Whether by ignorance or design, the tax bill which has passed the House and is now before the Senate, if it should become a law in its present form, would—

1. Increase the violence of upward and downward swings of the business cycle;

2. Vastly increase the difficulties of the capital goods industries, which are lagging in recovery as it is—including railway equipment and supply manufacturing companies which, like all capital goods industries, already are subject to great fluctuations in their business.

Gaudier Booms, Deeper Depressions

The bill, as is generally known, provides a tax of up to 42½ per cent on corporate profits not paid out in dividends, with a material lightening of the tax burden where the bulk of income is paid out in dividends. The effect of such a provision, of course, in times of prosperity would be to swell corporate dividends, encourage expenditure of all kinds and boost stock market prices at the very time when a damper should be applied to speculation and spending. We all remember the excesses of speculative folly in the boom which ended in '29. But during that period many carefully-managed corporations were paying out considerably less than they earned, laying up some stores against the lean days ahead. How many of them would have accumulated reserves in this period if the government had taken from 17½ to 42½ cents (the proposed tax rates where 50 per cent and 100 per cent, respectively, of income are held in reserve) of every dollar they tried to save? To ask the question is to answer it: The tax on corporate thrift would have destroyed it at a time when it was sorely needed.

After the crash, when corporate earnings changed to deficits, the reserves which the wiser companies laid by prior to 1929 kept many of them from going bankrupt. By spending less during the boom, these corporations were able to continue their operations, to some degree at least, during the depression years. Some of them were able to continue to pay some dividends. And all which had been truly provident during the boom were enabled at least thereby to keep their overhead organizations intact and to pay their current debts and taxes. The conclusion is inescapable that the proposed punitive tax on corporate thrift would make future booms more profligate, future depressions more disastrous.

Capital Goods Chief Target of Cyclical Swings

The swing of the business cycle is always more severe in the capital goods industries than it is in those which produce consumers' goods. When a depression comes, people continue to eat and to wear out clothing, but they cease building houses, buying automobiles, purchasing new machinery and investing capital in new factories. As an instance of the violence of the cyclical variation in a capital goods industry, private construction, according to the Survey of Current Business of the Department of Commerce, attained a volume of 13 billion dollars in 1928 and declined to 2 billions in 1933 and 1934—a reduction of 85 per cent. By contrast, in consumers' goods, the dollar volume of department store sales in 1929 had an index number (Department of Commerce Survey of Current Business 1923-25—100) of 110, and throughout 1934 this index was approximately 75.

Violence in the upward and downward swings of the business cycle, it is clear, makes itself felt primarily in the capital goods industries. It is these industries right now which have failed to show complete recovery, and it is in them that the bulk of unemployment persists. With such an object lesson before it, economic statesmanship should be concerned with "snubbing" the shocks of cyclical change where these shocks are most severe. Excessive dividends in these industries in boom times would encourage over-expansion; there would be

no reserve for bad times, and the result in the ensuing depression would be even more bankruptcies and greater unemployment than that which we have already experienced.

The railway industry is vitally concerned in this situation. In the first place, capital goods form a large part of total railway traffic. Excessive declines in construction and in the production of iron and steel and other durable goods, mean a reduction which necessarily reduces railway employment severely and brings financial difficulties to all but the strongest companies. But the railways have a further interest, and an equally vital one, in the effect which the proposed taxation would have on the continuity of the concerns which supply the railways' needs for equipment and materials. The cyclical nature of this business has long been evident. To protect their own credit, the railways have perforce done the bulk of their buying when business and credit conditions were favorable and have reduced their purchases when these conditions were unfavorable. For example, in 1919, freight cars ordered totaled 29,000. In 1920 they mounted to 105,000. In 1921 they fell to 28,000. In 1922 they rose to 181,000, a total which has not since been reached. In 1929, a total of 124,000 cars were ordered, and in 1933 this total dropped to only 1,900.

Should Equipment Companies "Fold Up" During Depressions?

Manifestly a business which is subject to such alternating feast and famine simply must in the fat years lay a great deal by if it is to weather the lean years. A volume of only 1,900 freight cars, it is safe to say, would not even pay taxes on freight car building plant. If the companies which manufacture for railroads are to maintain continued corporate existence through recurrent periods of meager business, they must lay aside large proportions of their net income in years of plenty. If they do not do so, it is obvious that these companies which may not even earn taxes in some lean years will "fold up" whenever a depression comes. And a revival in traffic and a renewed demand for railway equipment will not find plants with overhead and engineering organizations intact, as now is the case, ready to go into production as needed.

Corporate thrift enabled the railway manufacturers to weather this depression and, with constant work by their designers, permits them to offer constantly improved products to the railways, with no decline in progress ascribable to the depression. Without such thrift many of these companies would now have been broken up and their organizations scattered. It would not be a pleasant prospect for the railways struggling out of a depression to have to face. But the proposed punitive taxation on corporate thrift is calculated, either by ignorance or design, to produce exactly that effect when, as corporate earnings rise with recovery, the building up of reserves is penalized and profligate dividend payments are encouraged.

Commercial versus Railroad Treatment of Ties

In a report which has just been released by the federal co-ordinator of transportation, his section on Property and Equipment recommends that those railways that are now contracting the treatment of their timber and those railways that are now purchasing their timber after treatment arrange to transfer the treatment of this timber to plants now owned and operated by other railways, thereby utilizing to capacity those plants in which individual railways have already invested capital. In effect, this plan proposes a pool of railway owned timber treating facilities, as outlined in an abstract of the report on a following page.

This revolutionary proposal raises a number of questions. First and foremost is that of the effect on the efficiency of the treatment, for no plan that will sacrifice thoroughness of treatment, with its effect on the ultimate life of the timber treated, to secure a saving in first cost is economical in the long run. A number of railways have long been recognized as doing outstanding work in the treatment of their timber. The same can be said with equal propriety of numerous commercial concerns. Furthermore, any timber treated for a railway at a commercial plant is subjected to the inspection of that railway and it is common knowledge that a railway commonly subjects such timber and treatment to more rigid inspection than it accords timber treated in its own plants. As a whole, therefore, it may be said that the quality of the treatment will not be improved by the transfer of treatment from commercial to railway plants—the danger is in the other direction.

As to costs, the report of the co-ordinator's staff indicates little difference between railway-owned and commercial plants, even after making several broad assumptions as to railway costs. These comparisons are of little value because of the incompleteness and inaccuracy of railway cost data for specialized operations. Furthermore, even if it were possible to secure accurate information regarding railway costs, it would be of little value because of the many variables entering into the treatment of timber, including the character of the wood being treated, the kind and amount of preservative used, the amount of preliminary machining (adzing and boring of ties, preframing of bridge timbers, etc.) for the different roads, making each railway's requirement a separate problem of costs.

Again, it must be remembered that the incentive of lowest cost is with the commercial concern, for it is constantly facing the competition of other alert companies that are also seeking the business of the railways. This in itself creates a check on excessive prices. In the railway plant, however, there is no such pressure for economy, except of the most general character, and if the co-ordinator's proposal should become effective, the control presented by commercial quotations would

be lost, and it is to be expected that costs would rise.

That there is over-capacity in the timber-treating industry today is recognized. That this is due in part to the sub-normal demands of the railways is common knowledge. There will still be excess capacity, however, when the demands of the railways and other users of treated timber return to normal. This condition calls for the elimination of the less efficient plants. Some of these are commercially owned; others are railway owned. To transfer business from an efficiently operated commercial plant to a less efficient railroad plant would place an unwarranted tax on the treatment of that timber. The solution lies in the closing down of the less efficient plants, regardless of ownership.

The proposal of the co-ordinator's staff is open to question also with regard to the broad problem of railway policy, with regard to engaging in manufacturing activities. If adopted, this recommendation will lead the railways further into the treatment of timber, in direct competition with concerns already engaged in the work and equipped to meet the full requirements of the railways. The treatment of timber is a highly specialized activity in itself, with a constant succession of new problems peculiar to itself. It requires technical knowledge of a high order, that has little in common with transportation, except in the ultimate use of the product. The problems peculiar to the railways are in themselves sufficient to demand the unrestricted thought and energy of railway officers today. They should leave to specialists in other industries all those details which can best be handled there.

Equipment Orders Passing Last Year's 12-Months Totals

More locomotives and more passenger-train cars have been ordered for domestic service in the United States during the first one-third of 1936 than were ordered during the twelve months of 1935; and the 1936 freight car purchases had on April 30 reached a point where the conversion of outstanding inquiries into orders will bring the current year's business in that category also above that of the entire year 1935.

Furthermore the tonnage of rail ordered during the first four months of the current year is more than 90 per cent of that placed throughout 1935.

The orders for 15 locomotives, reported in April issues of *Railway Age*, brought the year's total to date to 88 as compared with the 83 locomotives ordered during the entire year 1935. Included in the 1936 locomotive business are orders for 69 steam locomotives or nearly two and one-half times the number—28—of this type ordered throughout last year. In addition, there have been placed this year orders for power units for four streamlined trains, an export order for five steam locomotives and inquiries were outstanding on April 30 for 13 steam locomotives.

During April orders were reported for 3,650 freight cars, which, with an additional 777 ordered since the close of the month, bring the 1936 total to 13,340. This compares with a 1935 twelve-month total of 18,699, which, as stated at the outset, will be surpassed when inquiries for 8,675 cars, outstanding on April 30, are converted into orders. In addition an export order for 400 box cars has been reported this year, comparing with only 110 freight cars ordered here for export during 1935.

During 1935 only 63 passenger-train cars were ordered, and 55 of them were milk cars. Thus far in 1936 orders have been placed for 87 passenger-train cars, including 70 coaches. In addition there have been reported 1936 orders for five streamlined trains and inquiries were outstanding on April 30 for nine passenger-train cars. Throughout 1935 three streamlined motor trains were ordered.

Rail orders reported in April—90,483 tons—bring the total for the first one-third of the year to 450,125 tons as compared with 495,300 tons ordered during 1935's twelve months.

A Little Railroad Buying

Railroad equipment purchases in the first quarter of this year provide some rather cheerful reading matter. During the period the railroads put 2,984 new freight cars in service, compared with only 568 in the same months of 1935; on April 1 no less than 13,562 freight cars were on order, against 482 a year before. Purchases of motive power and passenger cars are less impressive, yet some engines and coaches are being bought. It is of record, too, that the carriers have re-entered the steel rail market on a modest scale during recent months.

In view of the general financial position of most railroad companies, this expansion of their purchasing must be explained on the ground of pressing necessity. It has, presumably, been fostered only a little by better current net earnings. How urgent it has become to make deferred replacements may be judged from the fact that receiver's certificates will finance some of these purchases and RFC loans certain others. In a nutshell railroads are beginning to buy not because they have money to spend but because they are compelled to find the means of rehabilitating the plant.

From all of which a useful moral can be drawn. The railroads have found the means to do a little necessitous buying, despite their generally unfavorable circumstances and such discouragements as the pending Wheeler-Crosser bill—not to mention several other measures less likely to reach the stage of enactment at this session. What contribution to re-employment might reasonably have been expected of them if, instead of repeated threats of sandbagging legislation, they met with some encouragement to work their way out of their difficulties as they have done before?

—From the Wall Street Journal.

Crowd Detraining from a Boston & Maine "Snow Train"—This Road, Which Originated the "Snow Train" in 1931, Carried 24,240 Passengers on Such Excursions Last Winter

Railroads Found "Gold" in Last Winter's Snow-Hills

Past season was a banner one for "snow trains" which attracted record crowds of sports enthusiasts

WHILE railway maintenance of way forces fought last winter's storms in their gloriously successful work of keeping the lines open, alert passenger traffic officers were finding "gold in them snow-hills." In other words the past season was a banner one for the "snow train." Record crowds patronized these excursions of Eastern roads from the first operated by the Boston & Maine on New Year's Day to the New Haven's Easter week-end train from New York to Mount Washington, N. H., for spring skiing at Tuckerman's Ravine. And aside from the revenue, which was substantial, the railroads obtained from their "snow train" operations much valuable publicity in the news columns and winter sports-equipment advertising in metropolitan newspapers. Results of some of these excursions are set forth below.

Boston & Maine, Maine Central and New Haven

The Boston & Maine, which originated the "snow train" in the United States on January 11, 1931, when it carried 197 winter sports enthusiasts on such an excursion from Boston, Mass., to Warner, N. H., last winter operated a total of 28 "snow trains," exclusive of eight which terminated on its line but were initial to the New York, New Haven & Hartford. Several of these trains were operated in two, three or four sections. Including those on trains operated jointly with the New Haven, the B. & M. carried a total of 24,240 "snow train" passengers; and, in addition, about 1,200 other winter sports enthusiasts used its regular trains for week-end trips to winter-sports areas.

While most of the B. & M. "snow trains" were operated between Boston and points in New Hampshire's White Mountains, others originated at Worcester, Mass., and those operated in conjunction with the New Haven —some going to destinations in Vermont—originated at Springfield, Mass., Lowell, New Bedford, Fall River and Providence, R. I.

The B. & M. "snow train" set-up included both one-day and week-end excursions, with fares varying from $1.75 to $3 round-trip for the former and averaging about $4 for the latter. The trains consisted only of coaches, no sleeping or parlor cars being used. Each, however, carried a dining car and each—or the first section if more than one were operated—carried a sports-equipment car, having for sale or rental equipment such as skis, ski clothing, toboggans, etc.; also smaller articles such as ski wax, straps, books on skiing, etc. Where trains were operated in sections, all sections carried a small supply of these incidentals, and the sports-equipment car was available to passengers of all sections either before departure or at destination.

Hotels and chambers of commerce at destination points took good care of the B. & M.'s "snow train" passengers. Week-end trains were met by representatives of chambers of commerce or outing clubs, and those not already having reservations were accommodated. The railroad undertook to make reservations at destination points for

passengers requesting it. Also on Sunday mornings these local committees arranged for groups to be taken to various points of interest or ski runs, and guides were provided where necessary. Passengers on the one-day trains were taken from the station to the trails by trucks, buses and automobiles at rates varying from 25 cents for the round trip, where distances to the ski runs were two miles or less, to 50 cents for the round trip for greater distances up to seven or eight miles.

The B. & M. advertised its "snow trains" extensively with posters, booklets and in the newspapers, using front-page space in some and winter sports pages of others that ran special sections. Also, it obtained prominent notices and illustrated feature stories in the news sections. The record excursion to a single destination was run on Sunday, January 19, from Boston to Fabyan, N. H. It operated in three sections, carrying 1,702 passengers. It was, however, on February 2 that the largest number of "snow train" passengers left North Station, Boston. Then a train, operated in four sections, between Boston and Lincoln, N. H., carried 1,539 passengers while another, operated in three sections between Boston and Wilton, N. H., carried 1,446—a total of 2,985. The big week-end was that of the Washington's birthday holiday over which "snow trains" out of North Station carried more than 5,000 passengers, forming a substantial part of what B. & M. passenger traffic officers called "the greatest throng of winter sports enthusiasts and holiday week-enders to travel northward from North Station in the last six years." On the week-end of January 29 the streamlined "Flying Yankee" became a "snow train," carrying the Dartmouth Outing Club from Boston to Warren, N. H.

The Maine Central also operated several "snow trains" for winter sports enthusiasts of Portland, Me., Lewiston, Auburn, Waterville and Winthrop. Destinations were Fryeburg, Rumford and Dover-Foxcroft. On Sunday, January 26, a Portland-Fryeburg train carried 424 passengers; on February 9 two trains carried 800 passengers from Portland, Lewiston, Auburn, Waterville and Winthrop to Rumford while on February 16, a train from Portland to Fryeburg and another from Waterville to Dover-Foxcroft carried a total of 731.

The New York, New Haven & Hartford, which operated New York's first "snow train" on January 27, 1935, this year collected approximately $50,000 in revenue from "snow train" passengers and winter-sports enthusiasts using regular trains. Out of New York this road operated one-day trains to Pittsfield, Mass., South Lee and Norfolk, Conn., and week-end trains to Waterbury, Vt., and Littleton; also, the Easter week-end train to Mount Washington, mentioned in the foregoing. In all 27 "snow trains" were operated—17 one-day excursions from New York to the Berkshires, four of the same type from Bridgeport, Conn., and New Haven to Brattleboro, Vt., and six week-end trips.

Some of the New Haven's week-end trains were operated on an all-expense basis while for others the railroad undertook to make hotel reservations upon request, without, however, guaranteeing accommodations. On all trains special facilities were provided, including dining and club cars and sports-equipment cars, where "one could be outfitted from red flannels to skis." Prior to setting up its "snow train" schedules the New Haven made a thorough survey of winter sports areas in order that patrons would be assured of ample skiing trails and slopes.

While, as stated above, the New Haven introduced the "snow train" to New Yorkers in 1935 and other roads there also operated such excursions last year, the big response came this year, reaching such proportions as to prompt the metropolitan press to treat the week-end exodus both from a news and feature angle. New York department stores and sporting-goods houses also joined in publicizing the trains, tying their winter-sports-equipment advertising to them. Communities into which the New Haven's trains ran were equally anxious to co-operate, since most of them, being primarily summer resorts, welcomed the opportunity of adding a winter-time business. These destination communities together with their States, prepared the ski trails and cleared the slopes.

New York Central and Delaware & Hudson

Special "snow trains" on the New York Central System transported 30,610 passengers between January 1 and March 6, according to a recent statement from that road's passenger traffic department. These passengers,

Destination Communities Co-operated in Many Ways, Among Which Was the Providing of Transportation from the Station to Ski Runs

the statement continued, "left in the small communities they visited a minimum of $85,000 in cash" Among the N. Y. C. "snow trains" were week-end and one-day excursions from New York to Phoenicia, N. Y., and Woodstock in the Catskills; from New York to Lake Placid, N. Y.; from Syracuse and Utica to Old Forge; from New York to Bear Mountain; from Detroit to Grayling, Mich.; and on the Boston & Albany out of Boston, Mass., to Hinsdale, North Adams and Middlefield. Also the N. Y. C., in conjunction with the Delaware & Hudson operated six week-end trains from New York to Gore Mountain, North Creek, N. Y.

The New York-Catskills excursions comprised five week-end and six Sunday trains with round trip fares of $3 and $2 respectively. A sporting-goods car, operated by a New York department store, was included in these trains, which carried a total of 2,943 passengers. From New York to Lake Placid only one special "snow train"—a week-end excursion—was operated; it carried 345 passengers. The seven Sunday trains from Syracuse and Utica to Old Forge, offering round trip rates of $2 and $1 respectively, carried 4,615 passengers. The New York-Bear Mountain trains, both special and regular, carried an estimated total of more than 11,500 winter sports enthusiasts, while 5,770 passengers patronized the Detroit-Grayling "snow trains" and more than 1,600 were transported on the excursions operated out of Boston.

The six week-end excursions operated from New York to North Creek in conjunction with the Delaware & Hudson attracted 2,498 passengers. These trains, like those to the Catskills, carried dining cars and sports-equipment cars operated by a New York department store.

The New York Central, in connection with its "snow trains," received "all kinds of co-operation" from sporting-goods stores, ski clubs and newspapers. It advertised the excursions extensively on posters, by direct mail and in the newspapers. Also, it maintained, in Grand Central Terminal, New York, an indicator to report snow conditions at various points. Its record "snow train" business was over Washington's birthday when 1,000 were carried to the Catskills and 850 to North Creek. This road is convinced that "the popularity of snow trains is not a passing fad but will continue for years to come." It is therefore making plans "to promote the improvement of facilities at winter resorts already developed and to foster the making of new ski trails and other winter sports attractions in additional communities."

As the New York-North Creek "snow trains" originating on the N. Y. C. terminated on the Delaware & Hudson the latter assumed the making of arrangements for passengers at destination. The various boarding houses and private homes in the town were canvassed and available rooms listed. Local committees saw to it that passengers were met and escorted to the boarding places assigned them. The charge for rooms ranged from $1 to $1.50 and the rooms were available from arrival Saturday morning until departure Sunday night. Meal prices were: Breakfast and luncheon, 50 cents each; dinner, 75 cents. The dining cars on these six North Creek trains, serving dinners at $1 and $1.25 and sandwich combinations at 50 cents and 75 cents, did a gross business of $2,500—an average of slightly over $1 per passenger.

The D. & H. also operated eight one-day snow trains to North Creek—four out of Schenectady and four from Albany. The round-trip fare in each case was $1.50 and the Schenectady trains carried 2,277 passengers, paying total fares of $3,316, while the Albany trains collected $2,617.50 from 1,775 passengers. These trains, each consisting of coaches, a dining car and a baggage car, were parked at North Creek where they were available to passengers for occupancy all day. The diners offered combination breakfasts at 65 cents, 85 cents and $1, while a table d'hote meal at $1 was served all day at North Creek, and also on the return trip.

These Schnectady and Albany trains were advertised in newspapers and also the D. & H. issued a number of attractive colored window cards which were placed in department and sporting goods stores.

Delaware, Lackawanna & Western

The Delaware, Lackawanna & Western operated five one-day "snow trains" from New York to Pocono Summit, Pa., in the Pocono Mountains, and a like number from Scranton, Pa., to the same destination. The New York trains, serving also New Jersey communities were sponsored by a Newark, N. J., department store, which co-operated with the Lackawanna in advertising and promoting them. A total of 1,200 passengers, paying a round-trip rate of $2.50, was carried on the trains out of New York; 50 per cent of these came from New York and the other half from New Jersey communities. An additional 1,000 passengers were carried on the trains out of Scranton at 75 cents for the round trip. This road estimates that it received revenue of $5,000 from last winter's "snow train" patrons and other winter sports enthusiasts using its regular trains.

Each Lackawanna "snow train" carried a recreation car and a diner on which specially-priced breakfasts, luncheons and dinners were served. The trains were parked at Pocono Summit from which buses carried passengers to the winter sports grounds of the Pocono Manor Inn, which had built ski runs and had available for rental skis, bob-sleds and other equipment. The trains were widely publicized in newspapers, on placards, in sporting-goods stores, and on the radio by the sponsoring department store. Newspapers covered the excursions extensively in news stories and, aside from the direct revenue, the Lackawanna feels that it will derive further benefit from such publicizing of resorts along its line. On February 12 this road operated from New York to the Pocono Mountains, a special "snow train," sponsored by a group of New York society people for the benefit of a nursery. The round trip fare was $7.50 and proceeds above the railroad fares went to the charity.

Baltimore & Ohio and Reading

It was more difficult for the Baltimore & Ohio, than for roads serving more Northern territories, to find on its lines ideal spots for winter sports enthusiasts. Nevertheless it collected $3,475 in passenger revenues from four "snow trains" operated last winter—two out of Buffalo, N. Y., and two out of Pittsburgh, Pa. In addition, it operated several special Sunday coach excursions which, though not promoted as "snow trains," carried many winter sports enthusiasts from Baltimore, Md., and Washington, D. C., to Glencoe, Pa.

The Buffalo trains, one-day excursions, were operated on January 19 and February 2 and went to Salamanca, N. Y., a distance of 62 miles for a round-trip fare of $1.25. These two trains, consisting of coaches, a cafe car and a baggage car for checking sports equipment, carried 866 passengers. The sporting grounds available to passengers of these trains were those of Allegheny State Park, a distance of seven miles from Salamanca. Bus service at a round-trip rate of 75 cents was provided, and at the Park the administration building, near the ski runs, was available for shelter and lunches.

The Pittsburgh trains operated to Kane, Pa., a distance of 195 miles at a round-trip fare of $4. These, leaving Pittsburgh at midnight Saturday, carried Pullmans, coaches, dining cars and a baggage car for checking sports equipment and housing sports equipment for

Department Stores and Sporting Goods Houses Featured "Snow Trains" in Their Advertising

rent. A total of 556 passengers made this trip on the two trains which were run on February 2 and February 9, the former earning gross revenue of $1,300. At destination the cars were parked under steam, permitting the passengers to maintain headquarters at the train, and the Chamber of Commerce of Kane provided free transportation, by horse-drawn bob-sleds, trucks and automobiles, from the station to farms where ski trails, and other winter sport facilities were available.

In promoting its "snow trains" the Baltimore & Ohio received the wholehearted co-operation of business interests at both origin and destination points. Department and sporting-goods stores in Buffalo featured the trains in their advertising and newspapers "played them up" as society and sports news. A Pittsburgh department store sponsored the Pittsburgh-Kane trains, publicizing them by radio, direct mail and newspaper advertising. A Kane newspaper got out a special edition in honor of the first train, the first page carrying a map of the surrounding countryside. Also, folders were issued showing the location capacity and prices of local hotels and restaurants, and having a map indicating the nature and location of the various sports facilities.

The Reading operated two one-day "snow trains" from Philadelphia, Pa., to Bear Mountain, N. Y., the trains running over the West Shore from New York. The round-trip fare was $3.25 and the first excursion, operated on January 26, was run in two sections and carried 755 passengers. The second, operated on February 9, carried 178. These trains carried coaches, dining cars and baggage cars for checking skis and other sports equipment; they earned a gross of $3,253, not including revenue from the dining cars. The latter offered special "snow train" menus with breakfasts at 50 and 75 cents and dinner at $1.

This road made no special arrangements for the accommodation of passengers at destination, since the "many events scheduled annually by Bear Mountain Park provided sufficient inducement." It advertised the trains extensively in newspapers and by posters and in this connection received the co-operation of Philadelphia department and sporting-goods stores whose representatives were called into consultation and advanced valuable suggestions. Also the trains received wide publicity in the news and feature sections of Philadelphia newspapers.

Pennsylvania and Erie

The Pennsylvania also operated two one-day "snow trains" from Philadelphia to Bear Mountain, via its own lines to Jersey City, N. J., and thence over the West Shore. These trains each consisted of coaches, a dining car and a refreshment car; the first operated on February 2 carried 256 passengers and the second on February 16 carried 188. In addition this road sold through one-day tickets to Bear Mountain on January 19, March 1 and March 15, the passengers making their own transfers at New York. From Philadelphia to the Pocono Mountains one-day tickets were sold each Sunday beginning January 12, through cars on regular trains being operated on six Sundays and on Washington's birthday; also to the same destination a special four-day round-trip ticket was on sale every day.

These P. R. R. winter sports excursions were advertised with flyers and booklets, and in the concourse of Broad Street Suburban Station, Philadelphia, there was erected a large animated window sign, in which was included a skiing scene and a series of thermometers, adjusted every day to show temperatures and snow conditions at each of 10 winter sports centers.

The Erie last winter operated no excursions which were promoted as "snow trains." It did, however, run two special trains from New York to Salisbury Mills, N. Y., to accommodate members of the Norsemen Ski Club of New York, which sponsored tournaments at that point on February 2 and February 16.

New Automatic Signals on the Missouri Pacific

Installation on 110 miles of single-track line includes an automatic interlocking, a remote control power-operated switch and spring switches

Westbound Train Passing Lap at Huron

THE Missouri Pacific has recently completed the installation of automatic block signaling on 110 miles of single-track line between Shannon, Kan., and Union, Neb., on its line between Kansas City, Mo., and Omaha, Neb. Between Kansas City and Shannon, 53 miles, the line is equipped with automatic signaling and centralized traffic control, including power switches and signals for directing train movements without written train orders. The installation from Shannon to Union leaves only 24 miles of line from Union to Gilmore Junction to be signaled on the entire route between Kansas City and Omaha.

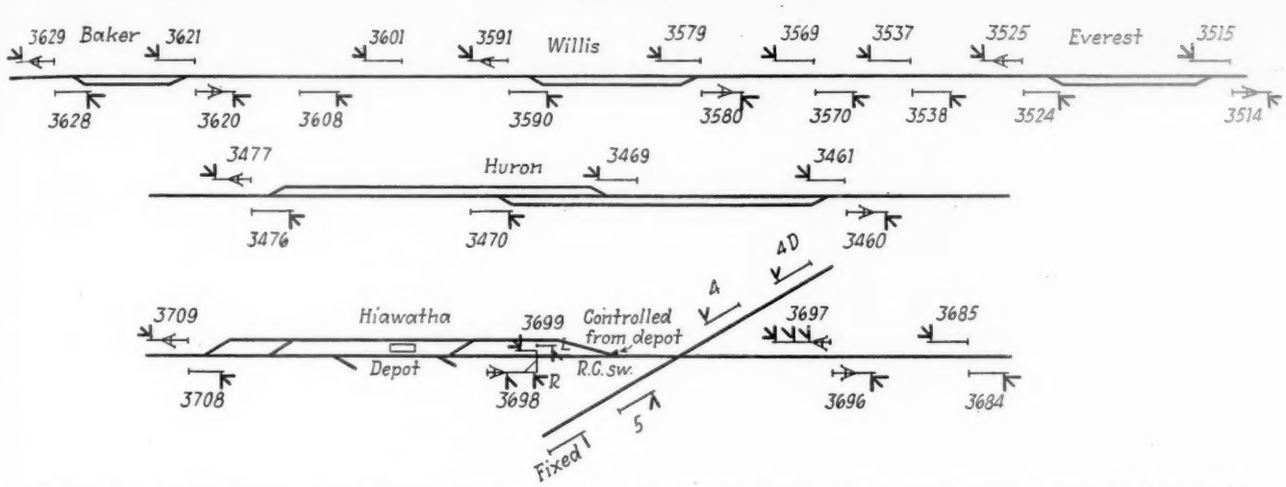
Character of the Line

On the section between Shannon and Union, the traffic includes (a) three passenger trains daily in each direction, including the Marathon, a fast train which makes the run each way between Kansas City and Omaha in 4 hours, (b) seven scheduled freight trains daily in each direction, three on fast schedules, and (c) extra trains as necessary. The total number of trains handled averages from 20 to 30 daily. The principal products handled include live stock, meat and grain southbound and manufactured products, coal and perishables northbound. Most of the freight trains are moved during the night in order to provide morning deliveries at the terminals. Therefore, the track capacity is governed by peak periods rather than the total train movements in 24 hours.

The line traverses a rolling territory with numerous grades and curves, very little of the line being tangent; therefore, the view of the track ahead is in most cases restricted to comparatively short distances. On account of the character of the line and the speed and volume of train movements, the installation of automatic signaling was justified from the standpoint of safety as well as the operating savings effected. Experience on the Missouri Pacific has proved that the installation of automatic signaling effects a reduction in the number of accidents due to broken rails, misplaced switches and errors in train operation. Furthermore, it is estimated that the installation between Shannon and Union will result in savings in overtime and train stops, the closing of telegraph offices, and the reduced maintenance of switch lamps, totaling $36,000 annually, an amount which will more than offset the annual cost of maintenance and operation of the signaling.

The automatic signaling is controlled on the usual absolute permissive block scheme whereby protection against facing movements is provided by absolute stop aspects, while permissive aspects are afforded for following train movements. The sketch shows a typical arrangement of signaling between Baker and Willis, including one set of staggered intermediate signals and

Missouri Pacific Home Signal at Automatic Interlocking at Nebraska, City

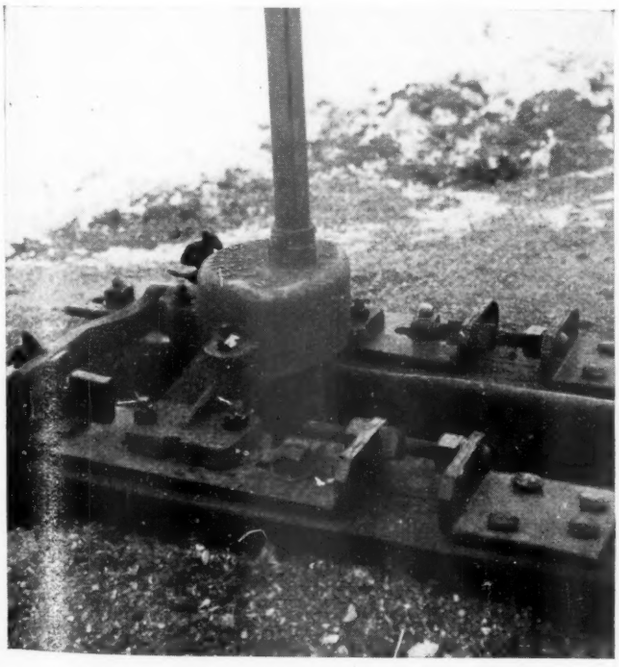


Typical Track and Signal Plans: Top Between Two Passing Tracks; Center, Lap Siding Signaling; and Bottom Remote-Control Interlocking

two sets of intermediate double locations between Willis and Everest.

Special Operation Features of Signaling

The signals are of the three-unit color-light type, using the standard aspects of red for "stop," yellow for "proceed at restricted speed," and green for "proceed." Each absolute signal is equipped with a reflector-type marker "A." Permissive signals located on grades are equipped with a reflector-type marker "T," which authorizes a freight train, with more than 75 per cent of its tonnage rating, to pass at restricted speed a signal indicating "stop." The rules define restricted speed as follows: "Proceed prepared to stop short of trains, obstruction, or anything that may require the speed of a train to be reduced." The point of importance is to insure that an engineman, when encountering restricted speed aspect, is to take action at once. When the installation was designed, the intermediate signals were so located that an engineman would have a clear view of each signal for at least 2,000 ft. in the approach. Furthermore, when an absolute signal indicates "stop," with an opposing train in the block, each of the two successive signals in the approach, display the yellow "restricted-speed" aspect. These provisions were made to insure adequate stopping distance for high-speed freight and passenger trains, without requiring additional aspects beyond the standard of three.



Adjusting Device for Hand-Operated Switch Stands

Special signaling was provided at the lap sidings to avoid train stops at the outer ends of the sidings. Ordinarily the trains enter these sidings at the lap and leave at the outer end. Referring to the sketch of the Huron layout, the controls of the lap signals are overlapped beyond the absolute signals at the outer end for opposing moves; that is, signal 3470 is overlapped beyond 3461. This arrangement permits an eastbound train on the main line to approach the lap or stop short of signal 3470 while waiting for a meet with a westbound train, which can proceed up to the lap end of the siding before stopping for a signal.

Automatic Interlocking Saves Train Stops

At Nebraska City, 98 miles north of Shannon, the single-track main line of the Missouri Pacific crosses a single-track secondary line of the Burlington. As a part of the new signaling program, an automatic interlocking was installed at this crossing so that trains can cross without making the statutory stop to flag. On the Missouri Pacific, this crossing is at the foot of an ascending grade in each direction, so that the elimination of the stop is of decided advantage, saving from 10 to 15 minutes for each tonnage freight train and from 3 to 5 minutes for each passenger train.

At Hiawatha, Kan., 38 miles north of Shannon, a 23-lever mechanical interlocking had been in service at a crossing of the Missouri Pacific with a line of the Union Pacific, the plant including main-line derails and a switch leading to a passing track for the Missouri Pacific. To eliminate the operating expense occasioned by the manual control of this plant, it was replaced with automatic interlocking, the old semaphore signals on the Missouri Pacific were replaced by color-light signals, electric semaphores were installed on the Union Pacific, and the derails were eliminated. An electric power switch machine was provided for the operation of the M. P. passing-track switch, which is controlled by a two-lever desk machine in the office of the operator at the Hiawatha station. The passing-track turnout is a No. 20 with a 30-ft. switch point. A special feature of the new power switch is the use of a second operating connection 12 ft. from the points, which is connected to the first operating rod.

The new remotely-controlled switch with automatic interlocking provides the same facility in operating trains

as the previous mechanical plant. Whereas the cost of the changeover was $12,500, the saving in operating expenses effected annually will be $5,000.

A special feature of the interlockings at Nebraska City and at Hiawatha is the arrangement of the color-light signals used for home signals in a triangle with a circular background, this being a distinguishing contrast to the automatic block signals in which the lamps are arranged vertically on an oblong background. Furthermore, each interlocking home signal is equipped with a call-on arm. When the block controlling the interlocking signal is occupied, the second "arm" will display a yellow "call-on" aspect automatically, providing no conflicting trains are approaching or are occupying the crossing. The lamps used in the signals are rated at 10 volts, 18 watts and are energized at not to exceed 9 volts so as to lengthen the lamp life.

Spring Switches Used Effectively

In order to eliminate the necessity for stopping trains to handle the switches at the departing ends of passing tracks at Union, which are located on an ascending grade, these switches are equipped with spring-switch mechanisms as a part of the signaling program. Southbound high signals are provided on the main line as well as at the clearance point on the siding to protect southbound trains. Likewise, northbound train movements over this switch are protected by an automatic signal located 100 ft. in approach to the switch in the facing-point direction.

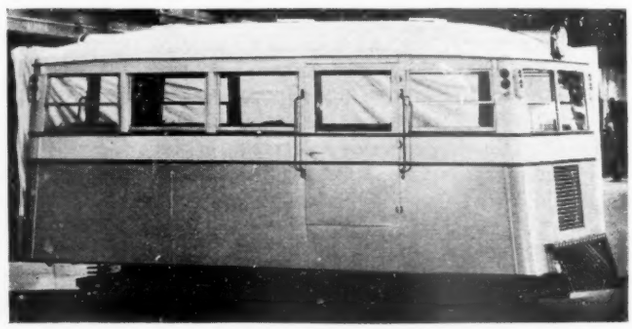
The spring switch mechanism is of the Ramapo-Ajax type, equipped with two sets of springs and buffers, which are housed in the one case which forms the base of the stand. The position of the switch is checked by two switch circuit controllers, each connected to one of the switch points. These controllers are adjusted so that if the switch point is open more than 3/16 in. the signals will display the stop aspect. The switch layout is constructed with 1-in. by 9-in. insulated gage plates on three ties, including the one ahead of the points and the first two under the points, fixed rail braces being used on these ties with braces on the gage side of the rail on the tie ahead of the point to prevent the "rolling" of the stock rail. Tie straps bolted to each end of the ties assist in maintaining the relative position of the first seven ties under the switch. For No. 10 turnouts, the train speed for trailing movements over the turnout is limited to 10 m.p.h. and, for No. 20 turnouts, to 30 m.p.h. No special speed limit is in effect for main-line train movements in either direction over the spring switches on this territory.

As a part of the signaling improvement program each of the main-line switches on this territory was equipped with a special switch stand adjuster, a device developed by W. L. Whittington, formerly signal supervisor of the Missouri Pacific. As shown in one of the illustrations, this adjuster consists of two 3/4-in. by 7-in. by 31-in. plates on which the switch stand is bolted, the plates being slotted to provide for bolts passing through the ties. This plate and stand assembly is then connected by two 1-in. by 10-in. adjusting bolts to two short plates which are spiked to the tie. By loosening the bolts through the ties and adjusting the adjuster bolts, the stand can be moved to or from the track as desired, after which the nuts are tightened. The ease with which proper adjustment can be secured and maintained, as well as the fact that the switch ties are not damaged by moving the stand spikes frequently, are some of the advantages of this adjusting arrangement.

The construction of this signaling installation was done partly by contract and partly by railroad forces. The pole-line work, including the installation of the crossarms, pins, insulators and line wires, as well as the pouring of the concrete signal foundations in place, was done by R. H. Bouligny, Inc. The instrument cases were wired complete with the apparatus in place in the factory. The remainder of the construction was handled by signal department forces of the Missouri Pacific. The signal apparatus was furnished by the General Railway Signal Company.

Fairmont Official Inspection Coach

FAIRMONT RAILWAY MOTORS, INC., Fairmont, Minn., has delivered to the Northern Pacific a railway motor coach for official inspection and for short-line passenger, express and light freight service, in which the chassis is the same as on two such cars which this road has had in service for more than a year but which embodies a different type of body in that the engine housing is located within the body in the new



The Model 4100 Inspection Coach

model while in the earlier cars the hoods extend outside in front, automobile-fashion.

The new unit, known as Model 4100, will carry from 6 to 12 passengers depending on the seating arrangement. It is similar to and intermediate in size between this company's Model 5100, a larger inspection car, and its lighter 3100 Model. The new coach has an over-all length of 18 ft. 1½ in., an over-all width of 8 ft. 4 in., an over-all height above the rails of 8 ft. 4½ in., and headroom inside of 5 ft. 6 in. The floor space occupied by the engine housing is 30 in. by 60½ in. In order to reduce air resistance and decrease the glare, the front and rear ends of the body are sloped inward at an angle of about 6 deg.

As delivered for official inspection service, the Model 4100 is equipped with shatter-proof glass in the windshield, and with screens, curtains, storm sash, complete body insulation and two Tropic Air heaters. Other features of the new model include a long spring base and spring travel smoothed by two-way hydraulic shock absorbers; conveniently located doors, hand rails and running boards which make it easy to enter and leave the car quickly; a 77-hp. Waukesha six-cylinder engine; Bendix vacuum power brakes of the clasp type on outside renewable drums; and Davis steel wheels, Timken bearings and trunnion-mounted axles. With reversible seats, four speeds forward or backward and controls so situated as to be handy for the driver when facing in either direction, the car is completely reversible.

Would Eliminate the Commercial Treatment of Railroad Timber

Lockwood report recommends that carriers' needs be filled entirely in company-owned and operated plants

A GENERAL study of the practices followed in treating ties and other railway timbers, to be made by the Association of American Railroads, is advocated by Joseph B. Eastman, federal co-ordinator of transportation, in a letter with which he transmitted to the railroads copies of a report prepared by R. L. Lockwood, director of the division of property and equipment, on his study of prevailing wood preservation practices and policies.

Of particular interest are the recommendations embodied in the report, and while the co-ordinator does not request specific action on them at this time, he asks that they be studied. The recommendations are as follows:

Conclusions

1. The railroads which are now operating wood preserving plants should continue to do so.

2. These railroads, also railroads which now own such plants but have them operated by outside contractors, and railroads which own such plants but have closed them, should co-operate in a determined effort to secure a sufficient volume of business from other roads to enable reasonably efficient operation of as many railroad-owned plants as possible.

3. In case it is found impossible to secure a sufficient volume of business to operate a given plant at such proportion of its capacity as would result in reasonable unit costs, such plant should be disposed of permanently on the most favorable basis obtainable.

4. A study should be made under the auspices of the Association of American Railroads to determine the possible advantages of consolidation of wood preserving plants on a regional if not a national scale. On present information, it appears possible that some degree of consolidation and joint operation might further reduce the total cost of treated materials delivered at the point of use. A principal factor in such reduction would be the allocation of sufficient business to each well-equipped plant to enable it to operate at a high proportion of its capacity.

5. Further technical study of wood preservation should be carried on under the auspices of the Association of American Railroads, and of the American Railway Engineering Association in particular. Such study should be directed particularly toward developing and promoting the use of standard specifications covering the kind and quantity of materials to be used for preserving the different kinds of wood products, and toward developing and promoting the use of efficient standard methods of inspecting and testing such products.

Based on Replies to Questionnaire

As indicated by these recommendations, the investigation was addressed primarily to the policies of the railroads with respect to the treatment of wood in their own plants, to the leasing of their plants to contractors, and to treatment in plants owned by contractors, as well as to recent changes of policy in this regard. The report was based on data obtained in reply to a questionnaire, and covers 21 plants operated by railroads, 5 railroad-owned plants operated by contractors, the treatment of materials for the railroads at 70 commercial plants, and the purchase of treated material from 58 commercial plants.

The report was confined to the treatment of ties because ties constitute the bulk of railroad material which receives preservative treatment. They are fairly uniform in size, and there is less diversity in the kind and quantity of preservative used for them than for piles, poles, structural timber, and miscellaneous lumber. For the sake of uniformity, there were included under that heading not only crossties, but also bridge ties and switch ties.

Attention was directed to the difficulty experienced in arriving at comparable cost figures owing to wide differences in allocating the various charges, in computing the rated capacities of the plants, etc. Excerpts from the report follow:

In some cases, both in respect to railroad-operated plants and to commercial plants, it was not practicable to secure cost figures in sufficient detail to enable elimination of all special items of expense, such as the cost of anti-checking devices and applying them, and cost of prefabrication. In such cases, or where there was any question as to the accuracy or comparability of the figures submitted, they were omitted from the compilation of average costs. There remained, however, a sufficient number of plants and a sufficient volume of production represented under each classification to give average cost figures which should be truly representative.

It appears that few roads actually charge interest on investment, or depreciation of buildings and equipment, against the operation of their wood treating plants. Several roads compute such charges for statistical purposes, and others estimated or figured them especially for our use, but in order to secure uniformity it was necessary for us to adjust these two items in most of the railroad plant returns. This was done on a basis of six per cent interest and three per cent (average) depreciation per annum, which is probably more than was charged (or earned) by the commercial plants during 1934. It was found that in most of the railroad-operated plants inspection was performed by salaried employees and not charged separately, so in all other cases where cost of inspection was given or could be determined, it was added to the cost of treatment.

With regard to prefabrication, it was found that practically all of the standard crossties treated at railroad-owned plants were adzed and bored before treatment, and some were grooved or incised. A much smaller proportion of those treated at commercial plants were so prepared, and only a small minority of those purchased already treated. In arriving at the average cost of pre-

fabrication per cubic foot we have therefore taken into consideration only those ties which were actually prefabricated before treatment.

Output Far Below Capacity

The treating cost, as developed in the table, was considerably higher than had been anticipated, but this was clearly due to the small quantity of material treated in 1934. In checking the rate of operation of railroad-owned plants, difficulties were encountered because of the fact that no two roads appeared to use the same methods for calculating the annual capacity of their plants. Detailed study of a number of specific performance records indicated that a fair figure for the annual capacity of a tie-treating plant was 500 cubic feet of ties per cubic foot of retort capacity, on the basis of operating the plant 24 hours per day, (three 8-hour shifts) and 300 days per year.

Summary of Data Covering the Year 1934

	Railroad owned plants operated by railroads	Railroad owned plants operated by contractors	Railroad material treated at commercial plants	Treated material purchased from commercial plants
Total production on which cost was based, in cubic feet	24,677,279	6,217,355	31,444,459	7,489,108
Number of plants from which this material was procured	21	5	70	58
Number of states in which these plants were located	15	5	29	20
Average cost of preservative treatment only, including cost of loading on trams and unloading from trams to cars or storage, also cost of chemicals and cost of inspection, but *not* including cost of untreated ties. F.O.B. plant or line of roads.* Per Cubic Foot	$0.1300	$0.1523	$0.1278	
Average cost of yard handling, including unloading from cars and piling for seasoning and, in some cases, storing after treatment, and loading for shipment. Per Cubic Foot	0.0088	0.0123	0.0111	$0.1601
Average cost of prefabrication, including adzing, boring, and in some cases, grooving and incising. (For that portion of total which *was* prefabricated.) Per Cubic Foot	0.0052	0.0059	0.0076	0.0185
Total cost of treatment, including yard handling and prefabrication, but not including untreated ties or anti-checking devices. F.O.B. plant or line of road.* Per Cubic Foot	$0.1440	$0.1705	$0.1465	$0.1786

* F.O.B. plant in the case of railroad operated plants, otherwise F.O.B. line of road.

NOTE.—As explained, total costs per cubic foot as given above are not the averages of actual costs reported, but are the estimated average costs if railroad-operated plants had charged six per cent interest and three per cent depreciation, and if all ties had been adzed and bored before treatment.

On that basis it was found that of the 21 railroad-operated plants which treated ties in 1934, the tie output of two plants amounted to less than 5 per cent of capacity, one plant exceeded its rated capacity and the average for all plants was 22.7 per cent of capacity.

While the commercial business was divided among a greater total number of plants than were operated by the railroads, the bulk of this business went to a comparatively few companies and plants, and these companies apparently fared somewhat better than the railroads, although even so it is doubtful whether they earned 6 per cent on their invested capital after charging proper depreciation. Of the 21 railroad-operated plants, only 12 treated ties to the amount of 1,000,000 cu. ft. or more during the year 1934, whereas there were at least 19 commercial plants which had an output of 1,000,000 cu. ft. or more.

The cost of preservative treatment per cubic foot is bound to decrease materially as the volume of business increases, since the fixed charges per unit of output vary inversely with the volume, and the direct charges, (labor, power, etc.) per unit should decrease to some extent as volume increases. It is, therefore, important, for the sake of economy, that the volume of work handled by railroad-operated plants should bear a much larger ratio to their capacities.

The advantage of quantity production is clearly illustrated by a study of the cost figures for the 21 railroad-operated plants which are under consideration. Of these 21 plants, 10 were operated in 1934 at 25 per cent or more of capacity, the average rate being 33.9 per cent, and for these 10 the average cost of treatment was only $0.1166 per cubic foot as against $0.13 for the entire group. The other 11 plants, operating at an average of only 13.6 per cent of capacity, showed an average cost of $0.1583 per cubic foot.

As general business improves and the railroads are able to take up deferred maintenance, their tie requirements will undoubtedly increase, but there are a number of roads which evidently built treating plants to take care of their requirements during the transition period when tie treatment was coming into general use, and now that a large percentage of ties in track are already treated, it is doubtful if their individual requirements will ever again require the use of their entire plant capacity. It appears, therefore, that either this excess capacity should be permanently disposed of, or some way should be found for securing more business for railroad-operated plants.

Estimated Savings

A careful study was made of the location of railroad-owned treating plants, and of commercial plants which treated railroad material or sold treated material to the railroads during the year 1934. This study indicated that if due consideration had been given to the sources of supply of untreated ties and the points at which treated ties are used, it might have been possible to transfer enough of the 1934 business from commercial plants to railroad plants to have approximately doubled the output of the latter, without adding materially to the cost of transporting ties to their final destination. If this could have been done, it seems probable that the cost of treatment at these plants would not have exceeded $0.115 per cubic foot, as compared with an actual cost of $0.13 at railroad-operated plants and a somewhat higher figure at commercial plants. This would have resulted in saving at least $0.015 per cubic foot, or at least 5 cents per tie. On the basis of normal replacement of approximately 70,000,000 ties per year, such saving would amount to a total of not less than $3,500,000 per year.

Such a policy on the part of the railroads would probably seriously impair the business of some of the commercial wood preserving plants. There is ample evidence, however, that there is at present an excess of wood preserving capacity in the country, and considerations of ultimate economy point toward the elimination of some of the smaller and less efficient plants. From the standpoint of economy to the railroads alone, the information on which this report is based indicates that the railroads as a whole could make substantial savings in the cost of wood preservation by concentrating such operations in a relatively small number of plants owned and operated by themselves, individually or jointly.

Traffic Clubs Convention Has Record Attendance

THE largest attendance at a convention of the Associated Traffic Clubs of America was recorded at the semi-annual meeting in New Orleans, La., on April 28 and 29, when the registration for the two days totalled 930 persons, an increase of 29 over the highest previous registration recorded at the Indianapolis meeting on October 15 and 16. The program of the convention in addition to committee reports, included a general discussion of transportation. Formal addresses were made by Dr. Charles R. Raper, dean of the College of Business Administration of Syracuse University, who spoke on "Transportation and Economic Planning," and by Harry L. Purdy, assistant professor of economics at Dartmouth College, who spoke on "A Proposed Change in Federal Regulatory Policies Towards Transportation." At a banquet on April 29, Harry G. Taylor, chairman of the Western Association of Railway Executives, spoke on "Simplification of Regulation." An abstract of Mr. Taylor's talk will appear in a later issue of the *Railway Age*. The next meeting of the association will be held at Dayton, Ohio.

Transportation and Economic Planning

Dr. Raper expressed the opinion that to build more transportation facilities through contributions from the public treasuries where we now have a large surplus in many places, cannot be justified on economic grounds or the grounds of public welfare. Joint effort on the part of the government, state and federal, and the private carriers, to bring about a reduction in the surplus of transportation and a certain amount of co-ordination of the different carriers would seem to be an act of wisdom.

In his discussion of highways and motor vehicles, he said that if the railroads and existing motor carriers are now supplying adequate and efficient transportation service at reasonable rates it will mean a wasteful expenditure of public monies to build more highway space for other motor carrier competitors unless the additional space is called for largely by the non-commercial vehicles. "Our rail facilities," he continued, "are far in excess of any demand for their services. Motor carrier facilities have had a vast expansion during the last six years. These and the rail facilities can now move a far greater traffic than is now available or is likely to be available during the next few years. Traffic surveys made in many places and in several states reveal the important fact that about 92 per cent of the motor vehicle traffic does not need the type of highway which the remaining 8 per cent must have. The cost of constructing the highway demanded by the 8 per cent of traffic is far greater than that of the highway needed by the 92 per cent. The pavement and its substructure must be thicker and stronger. It must have more width and longer sight distance. Each of these additions to the road means a large addition to the cost of construction.

"A survey made in New York state in 1934," said Dr. Raper, "brought out the vital fact that less than two per cent of all the motor vehicle traffic on the secondary roads of the state was of the heavy vehicle type. To build all these secondary roads so as to stand the pressure and wear of two per cent of the traffic when 98 per cent of the traffic does not need such roads would be economic waste on a very large scale. Economic planning and the public interest, therefore, demand that the state and local governments discontinue all efforts to construct highways for the heavy vehicles unless the traffic of such vehicles is large. They also demand that the state and local governments fix the maximum weight of vehicles and load for each type of their highways and prohibit any vehicle with greater weight from operation upon them."

Motor Carrier Regulation

In discussing federal and state regulation of motor carriers, he said that such regulation seems to justify itself on the grounds of relative fairness to railroads and motorists and on the ground of public interest, for any sound economic planning for transportation for the other agents of economic life demands some kind of reasonable and effective regulation for the nation of interstate commerce commercial motor carriers. The results of regulation, he said, will probably be: (1) Tendency toward stabilization of motor transportation, (2) tendency toward the elimination of the weak motor carrier, (3) tendency toward higher rates for motor carrier service, and (4) tendency toward some important co-ordination between the railroads and motor vehicles. In addition, he said, that with federal regulation of interstate motor carriers it should be possible for each of the states to do something worth while in the regulation of the intrastate commercial motor carriers.

Dr. Raper was of the opinion that sound economic planning of transportation and of other agents of our economic life demands that we put no more money into inland waterways unless the proof of the need for such carriers is so clear that there can be no mistake about it. The investments which have already been made should, of course, be salvaged as far as possible without spending much new money, provided the need for such transportation is unmistakably proven.

A Proposed Change in Regulation

Mr. Purdy discussed rate regulation, regulation by rate formula, regulation of discrimination and the control of investments. "It can only be briefly observed," he said, " that certain conditional controls may be advantageously continued and extended in use. Publication and adherent requirements have been laid on the rail carriers in the past, and are necessary to an open and informed competition. Shippers are thereby promised a certain measure of stability in rates and personal discrimination is effectively controlled. In addition, the knowledge necessary to an intelligent choice is made available to shippers. Adequate provision has been made for the publicity for the rates of common carriers by highway in the Motor Carrier Act of 1935. For the contract carrier only publicity of minimum rates is required. Where the contract carrier is in actuality a public carrier the limited requirement is not adequate. Publicity for the charges of the inland water carrier is needed and the publication of actual in place of maximum rates should be demanded of the coastal common carrier.

"Maximum rate regulation is now applied unevenly over the competing carriers that make up the present national transportation system. However, the danger of monopoly charges is small and extension of the control is not needed for the protection of the shipper. On the other hand, the restricted scope of the minimum rate control demands attention. With intelligent competitive control of transportation supported by an effective control of supply, destructive rate cutting should not appear. For the present, the minimum rate control may be needed, although after the industry adjusts itself to the presence of the highway carrier, the demands made on

the control would be small. At this point, granting that there is value in commission control of minimum rates, we certainly must recognize that minimum rate regulation for railway and highway carriers in many regions is meaningless and useless as long as coastal, intercoastal and inland waterway carriers may reduce rates at will. Experience should show that the profit seeking of present management, once free from extensive restraint, will produce adequate service at reasonable and nondiscriminatory rates. The interests of the shipper seem ably safeguarded by the presence of competing carriers. If the competitive control appears unable to prevent overinvestment in transportation facilities then some control of supply must be invoked to prevent rate instability that is injurious to the operator and to the shipper.

Potentialities of Competition Overlooked

"In a preparation of transportation regulation little consideration has been given to the current potentialities of competition. In part, that neglect is a result of the failure to recognize the proper jurisdiction of regulation and the unequal restraints imposed on private management in the several transportation fields. Public regulation of transportation did not keep pace with the revolutionary change in transportation technic. The resulting comparative disorder was merely symptomatic but it was frequently accepted as proof of a functional failure. In addition, the phenomenon of the forceful and widespread competition is new and the necessary reconsideration of the essentials of regulatory policy is politically retired by its difficulty. The piecemeal extension of traditional controls will always appear more practicable."

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended April 25 totaled 666,181 cars, an increase of 25,524 cars as compared with the week before and an increase of 107,245 cars, or 19.2 per cent, as compared with the corresponding week of last year. Loading of merchandise showed a decrease as compared with the week before but all commodity classifications except ore showed increases over last year's figures. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, April 25, 1936

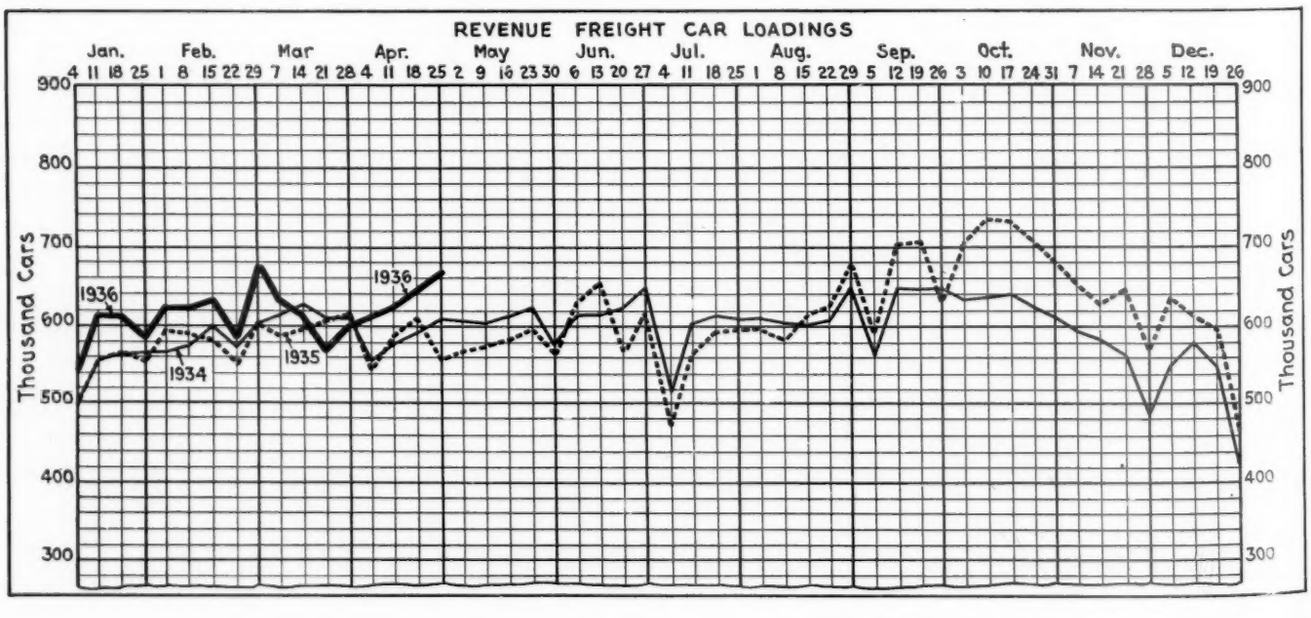
	1936	1935	1934
Eastern	151,985	130,602	147,937
Allegheny	141,791	105,250	124,730
Pocahontas	46,967	36,788	43,328
Southern	99,659	83,422	89,232
Northwestern	78,293	72,259	71,607
Central Western	94,341	83,699	84,390
Southwestern	53,145	46,916	48,480
Total Western Districts	225,779	202,874	204,477
Total All Roads	666,181	558,936	609,704
Commodities			
Grain and Grain Products	33,105	26,991	26,514
Live Stock	14,032	13,931	18,470
Coal	124,073	84,100	116,109
Coke	7,541	4,750	6,160
Forest Products	32,205	26,824	25,028
Ore	11,098	12,817	9,414
Merchandise L.C.L.	161,006	158,920	165,436
Miscellaneous	283,121	230,603	242,573
April 25	666,181	558,936	609,704
April 18	642,657	611,141	591,705
April 11	622,138	586,568	579,981
April 4	613,867	545,456	559,070
March 28	600,487	615,520	610,190
Cumulative Total, 17 Weeks	10,452,057	9,807,019	9,905,628

The freight car surplus for the first half of April averaged 202,158 cars, a decrease of 2,947 cars as compared with the last half of March. The total included 98,965 box cars, 62,320 coal cars, 26,830 stock cars, and 6,004 refrigerator cars.

Car Loading in Canada

Car loadings in Canada for the week ended April 25 reached a high point for the year at 47,228, as against 42,194 cars for the corresponding week in 1935, 43,161 cars in 1934 and fewer cars in 1933 and 1932, according to the compilation of the Dominion Bureau of Statistics. The week's total showed an increase of 2,695 over that of the preceding week.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
April 25, 1936	47,228	26,755
April 18, 1936	44,533	24,970
April 11, 1936	40,235	24,411
April 27, 1935	42,194	22,758
Cumulative Totals for Canada:		
April 25, 1936	720,599	396,956
April 27, 1935	725,355	389,846
April 28, 1934	700,107	398,416



Diesel Engines in Railway Service*

Railways should use the type of power, whether steam, electric or Diesel, best adapted to meet specialized requirements

By F. G. Gurley
Assistant Vice-President, C. B. & Q., Chicago

THE first commercial Diesel engine in the world to be put into regular service was built in St. Louis in 1898. This was a two-cylinder 60-hp. unit. The earlier Diesels were much too large and heavy for rail service. In 1925, the first sale of a four-cycle Diesel-electric locomotive to a railroad in the United States occurred. That engine is still working in yard service. It weighed too much per horsepower and developed insufficient total horsepower to be suitable for high-speed road service. There are now an appreciable number of Diesel-electric switch engines in the United States, although the total number is small when compared with the number of steam switch engines.

The Burlington uses three 450-hp. four-cycle Diesel-electric switchers. The first of these engines was placed in service in May, 1934, and the other two a few months later. They are assigned to service 24 hours a day, six days a week and 16 hours on the seventh day. Thus eight hours a week are allowed for maintenance.

The cost per switch-engine hour, exclusive of the wages of switchmen, as compared with the steam locomotive replaced, is shown in the table. In this state-

Relative Hourly Costs of Steam and Diesel-Electric Switcher Operation

	Steam	450-hp. Diesel
Fuel	$1.438	$ .229
Repairs—Running	.696	.36
—General	.180	...
Wages—enginemen	1.63	.92 (no fireman)
Lubricating oil	.015	.078
Water	.11	...
Enginehouse expense	.10	.054
Depreciation	.046	.363
	$4.215	$2.004

ment depreciation has been set up as 4 per cent on the steam engine and 8 per cent on the Diesel. Observe that the charge per engine hour for depreciation is almost 32 cents more for the Diesel—yet the hourly saving is $2.21. There are 8,760 hours in a year. Our experience is that we may reasonably anticipate keeping the Diesel-electric engine in service at least 85 per cent of the time, or 7,446 hours of service per year. My opinion is that the rate of depreciation on a Diesel should not be twice what it is on a steam switch engine.

The economies obtained and the experiences with these small switchers have resulted in our placing with the company which furnished these three an order for a larger four-cycle engine developing 1,000 hp. at 1,000 r.p.m. When received it will be used in combination yard and branch-line road work on one of the Texas lines. This locomotive will be of the same general construction as the first three, utilizing two 12-cyl. V-type engines.

Before speaking about Diesel-electric locomotives in road service, I desire to tell you something about our gas-electric operations. Several years ago we found that money could be saved by replacing many branch-line and some main-line steam passenger trains with gas-electric cars. It is my understanding that we use more gas-electric cars than any other American railroad, operating three million gas-electric motor-car miles per year. Our costs per mile, exclusive of crew and carrying charges, on a five-year average, have been: Maintenance (both running and general) including gasoline engine, electrical equipment, truck, and car body, 5.58 cents; fuel and lubricating oil, 5.23 cents; total, 10.81 cents.

Small Streamline Train Proposed

It was early in 1933 that we definitely decided to build a small streamline train which later became known as the Zephyr. For such a train a light-weight internal combustion engine was an absolute essential. A new two-cycle light-weight Diesel had just been developed and after an investigation, we were willing and anxious to use it. Its dimensions were almost ideal for our purpose, with eight (in line) 8-in. by 10-in. cylinders, developing a maximum of 660 hp. at 750 r.p.m. Our four-cycle gasoline engines with eight 8-in. by 10-in. cylinders develop 400 hp. at 950 r.p.m. and weigh 31 lb. per hp. The two-cycle Diesel weighs only 20 lb. per hp., the two-cycle principle and improved materials helping substantially in accomplishing this desirable reduction.

The original Zephyr, America's first Diesel-driven streamline train, is powered by the first two-cycle Diesel engine placed in rail service. Only three like it have been made before. The first never left the laboratory, and the other two were used in exhibition service at the 1933 Century of Progress. The train made its initial trial run April 9, 1934, and had an interesting pre-service career. It made a triumphal tour of the United States, including a non-stop run of 1,015 miles from Denver to Chicago at an average speed of 77.6 miles per hour.

The original Zephyr started on its assignment between Lincoln, Nebr., and Kansas City, Mo., via Omaha, Nebr., November 11, 1934. Up to March 1, 1936, the latest date for which complete records are available, that train and its companions, the two Twin City Zephyrs and the Mark Twain Zephyr, have made 838,882 miles. On that date Diesel powered streamline trains on all other American railroads had operated 622,860 miles. The availability of all of our Zephyr Diesel-electric trains since placed in service up to March 1 was 97 per cent. The availability of the engines would have been higher had it not been necessary on a few occasions to take the trains out of service for other reasons. All of our Diesels are in articulated trains. The assigned mileage of these four Diesel trains is 987,690 miles a year.

In the development stage of any mechanical engine or appliance, no matter how sound, obstacles arise and difficulties must be overcome. Every effort is made to anticipate troubles and to reduce them by making ade-

* Abstract of a paper presented at a conference on "Diesel Engines and Transportation" held March 26 and 27 at Purdue University, Lafayette, Ind.

quate preparations. As other problems arise, they must be met.

To be specific, it is impossible to maintain two Diesel-electric units in operation with facilities and by an organization developed to care for steam engines and expect each unit to make 26,460 miles a month as we do between Chicago and Minneapolis. Each of the Twin Zephyrs makes a round trip each day between Minneapolis and Chicago. Prior to inaugurating the Zephyrs, we trained our personnel in Diesel-electric locomotive maintenance and provided the facilities needed for expeditious and accurate work.

We had troubles with gas-electric cars when they were first received and the Diesels have not been perfect, any more than other motive power. Periodical staff meetings are still held to discuss steam-engine failures.

Some of the Difficulties Which Developed

We had difficulty with fuel injectors due to air leaks in packing and connections which produced some irregularity in the injector resulting in an air lock in the fuel-oil line. This was corrected by the installation of a return line which kept the air moving and did not permit an air lock. We have experienced difficulty with pistons, valves, and cylinder heads, but not to the extent that we encountered years ago with the gas-electric cars. These troubles have been overcome and the changes made in the Diesels have all been steps in the desired direction; i.e., the solution of these problems.

We have had four instances of trouble with traction motors. One of these was due to improper lubrication and resulted in a change in our policy with reference to grease application. Two apparently were roller bearing failures which caused us to adopt a different system of inspecting traction motors. The plan now is to remove and make careful inspection each 150,000 miles. The fourth was directly traceable to a man failure on the part of our maintenance force during February when, at one time two of the regular men were off sick, and the remaining force just did not get around to all the things that required attention.

Our 36-in. power-truck wheels, each of which carries a load of approximately 25,000 lb., have been free from difficulty. We use the A.A.R. 1-in-20 conical tread, but may change to 1-in-40 or perhaps cylindrical. To be perfectly safe we have not yet established a mileage limitation for axles, although we expect to do so following in that regard Burlington practice with reference to axles and crank pins on steam locomotives. During the severe cold weather of last winter, the Diesels gave a splendid account of themselves; in fact, better than any other trains operated on the Burlington.

The two engines assigned to daily round trips between Chicago and the Twin Cities operate at an overall speed between Chicago and St. Paul terminals of 66.3 miles an hour and make 2.9 miles per gallon of fuel oil hauling a total of three units. This is the fastest schedule in the United States on runs in excess of 100 miles. The other two pull four units each on a somewhat slower schedule; one makes 2.4 train miles per gallon, the other 1.09 miles per gallon. The present purchase price of fuel is 3.49 cents a gallon.

The cost per train mile for engine maintenance, fuel and lubricating oil since the four engines were placed in regular service up to February 1, 1936, has been: Locomotive maintenance, including Diesel engine, electrical equipment, power truck (one) and other equipment in engine compartment, 2.62 cents; fuel oil, 1.39 cents; lubricating oil, .83 cents; total, 4.84 cents.

The Twin City trains did not replace any steam mileage, but in Missouri where the reverse is true, comparative costs were: Steam locomotive maintenance, running, 10.21 cents, general, 5.00 cents; fuel, 13.77 cents; lubricating oil, negligible; total, 28.98 cents.

The steam costs, as locomotive builders point out in similar cases, are for engines over 20 years old, and which pulled a heavier load, but nevertheless they are the actual figures. It is also true that the Diesel costs do not include any general repairs, which constituted 5.00 cents or 33 per cent of the steam locomotive costs.

In approaching the problem of purchasing new motive power in the medium or upper brackets of horsepower for long-distance high-speed passenger work and in deciding whether it shall be steam or Diesel, the answer is not so readily apparent as in the case of the small three-car train. The purchase price of a Diesel is considerably more than for a steam engine of corresponding power. This is quite a handicap for the Diesel. Maintenance costs for either locomotive in such service are somewhat speculative. We have the background of steam costs in comparable sizes, but in heavier and lower-speed work, and the knowledge of Diesel costs in high-speed but light-weight assignment for a comparatively short period, augmented by experience with gas-electric engines over a considerable period of time.

Some of the Advantages of Diesel Power

What are some of the things which may be listed definitely in favor of the Diesel? Let us examine first the question of "making the time."

Often the statement is made that a steam engine will run as fast as track conditions, city ordinances, grade crossings, and similar things will permit, and further that it can run as fast as the Diesel. I think that is all true, but that ability is not the vital consideraion. In operating a train on any schedule, and especially a very fast one, it is quite desirable to hold the maximum speed as near the average as possible. This is worthy of emphasis. In this regard the Diesel has an advantage over the steam engine for the following reasons:

1—The Diesel can make longer runs without change of locomotives, thus saving the time required to uncouple one engine and couple on another.

2—Less time is needed for refueling and taking water en route.

3—If coal is burned on the steam locomotive, ash-pan cleaning will be necessary.

4—Less time is required to slow down or stop, because the rate of deceleration is faster than with existing steam engines. This is possible by reason of a higher braking ratio. A high braking ratio on steam locomotive drivers, the tires of which are shrunk on and held in place by the force of contraction, would develop a dangerous degree of heat.

5—Acceleration: With the same maximum horsepower and trains of equal weight, the Diesel-electric will reach a speed of 90 miles an hour quicker than a steam engine. But the characteristics of the steam engine allow opportunity for it to be designed with sufficient reserve horsepower so that it is probably fair to say that in actual practice each engine should attain top speed in about the same time.

The time saved by any one item may not appear large but the cumulative effect will be appreciable, and the time thus saved may be so distributed that no speed bursts are required, but instead the train will maintain a sustained cruising speed as close as possible to the average speed, thus insuring greater comfort. It is surprising how valuable minutes become on a fast schedule. In fact, a minute under such circumstances may be capitalized for a greater amount than would be possible with a slower schedule.

Track stresses are reduced. Our present Zephyrs have a 53-in. center of gravity and a maximum axle load of 50,000 lb., 8,290 lb. of which is unsprung. Because the power is exerted by traction motors there is no dy-

namic augment. An 1,800-hp. Diesel-electric, about which I shall speak later, will have a center of gravity 60 in. high and carry a load of 54,000 lb., 8,400 lb. of which will be unsprung on each of the four axles.

The most modern steam engine with which I am familiar that was especially designed for a high-speed passenger run has a 77-in. center of gravity, axle load of 72,000 lb. and a dynamic augment of 8,514 lb. at 90 miles an hour. This comparatively light dynamic augment is a desirable improvement over many existing steam engines and is obtained by lighter reciprocating and revolving parts.

The maximum unsprung weight is 13,170 lb. on the first driver axle. Total unsprung weight on the engine, exclusive of tank, is 39,920 lb. The unsprung weight is lower on this new locomotive than on many existing engines. Obviously the Diesel-electric imposes the lighter vertical load and our study shows that the same is true with reference to lateral forces on curves.

What are some of the benefits of reducing the stresses imposed upon the track structures? On the Burlington we keep a record of each rail changed on about 5,300 miles of track. It requires about ten miles of rail a year to replace the failed rail in that territory. This does not include rail used in the normal rail relay program. We do not know the precise extent to which these failures are increased by heavy static weights and hammer blows, but we do know that the trouble would be less with a decreased load.

Then there are the costs and difficulties incidental to keeping track in line and surface and here again we lack definite information as to the increase caused by greater weight, although we know that there is an increase.

What about continuity of service and availability? How many miles a day and a year can be made by the two types of locomotives? If one can do substantially better than the other, then the question is not so much the purchase price per unit, but purchase price per locomotive mile. In other words, will one steam locomotive equal in productivity one of the higher priced Diesel-electrics?

My understanding is that the record for a steam engine in regular passenger service in any single month is 19,200 miles. This record was established in 1934 by an engine built in 1931, when operating on an engine district of 914 miles at an average speed of 41.5 m.p.h. The highest average miles per month, however, is much below that. Under the plan in effect when that record was made, the engine received intermediate service at twelve stations; water being taken nine times and coal five; the fire was cleaned twice and the ash pan was dumped five times, and pins lubricated five times. When the schedule is speeded up to an average that is about 60 per cent faster, such as we have now between Chicago and the Twin Cities, and propose between Chicago and Denver, an entirely different situation is created. Then it is that delays incidental to refueling, water, fire cleaning, etc., assume real proportions. On one nationally known passenger run operating between 950 and 1000 miles at an average speed of 58 miles an hour, three steam engines are used each trip.

Some locomotive assignments have a high test or laboratory value, perhaps none more than our Chicago-Twin City Diesel-electric assignment and the steam assignments on other lines. We have been making a round trip daily, the others a single trip. This experience definitely supports the conclusion that one steam engine is not the equal of one Diesel-electric in productivity.

On the Burlington, we have had the benefit of another very interesting experience on a part of the railroad where new high-speed trains are to be inaugurated. The results of this influenced the decision I shall mention later. For the 2½ years ended May, 1935, one of our fine Hudson-type engines had a daily assignment of 510 miles, making a round trip each day between Denver and McCook on our Aristocrat, which, on its eastward schedule, had an average speed which varied from 43.5 to 46.1 miles an hour. During this period, the availability of that engine was 69.21 per cent. (In the sixteen months from November, 1934, to March, 1936, the original Zephyr, with a daily assignment of 500 miles, had an availability of 96.11 per cent.)

The steam engine was given a general shopping three times in that 2½ years. Each time a complete set of flues and a back flue sheet were renewed on account of the pitting action of water in that territory. At two of the shoppings, portions of firebox side sheets were renewed for the same reason.

Many things contribute to the greater availability of the Diesel-electric. Compliance with governmental inspection requirements will keep a steam engine out of service fifteen days a year. Diesel-electric inspections can be made during layover periods. Moving parts of the Diesel engines are of a nature and weight which permit normal running repairs to be made during layover periods, if there are about seven hours at mechanical terminal between the arrival and departure. Unfortunately, that is not true of a steam engine.

Assuming trained personnel, proper facilities, an adequate stock of repair parts, and including a spare power truck, or at least spare traction motors, it would seem that theoretically a Diesel-electric could be kept in road service constantly between general repairs. Removal of the crank shaft for grinding is the outstanding work which will necessitate general repairs. Experience will determine the mileage we can make before that is necessary. It should be over 500,000 miles. Of course, as a practical matter, no such perfect availability can be obtained, because something will happen to prevent it.

The increased availability and greater continuity of service of the Diesel-electric engine is one of the strongest arguments in favor of its use. It means less units are needed, and the cost of maintenance is materially influenced by the number of units, as well as the mileage they make. The rapidity with which repairs are made, contributing as it does to greater availability, is also closely associated with maintenance costs. I stated previously that maintenance cost had certain speculative aspects, but after studying it carefully, we conclude that the maintenance cost of the Diesel-electrics, which I shall mention later, would about equal those of a corresponding steam engine, with the probability that the Diesel-electric cost would be slightly lower.

Potential Fuel Economy

The high thermal efficiency of the Diesel is one of its outstanding characteristics. The saving in fuel costs produced by our switchers and Zephyrs has been given. A study of our proposed Twin City and Denver passenger runs developed that attractive fuel economies would be obtained with Diesel-electrics. It is possible however, that in some locations the relative costs of coal and Diesel oil delivered to the engine will be such that a transportation service unit may be rendered by a steam engine with less fuel cost than with a Diesel. Generally speaking, this will not be true. This merely means that no blanket rule can be laid down. Each situation must be analyzed. In so far as high-speed passenger service is concerned, the roads in our territory have favored burning oil on steam engines, apparently to avoid the delays I have mentioned. The steam locomotive com-

pany which submitted a proposal for our new Denver service recommended that we burn oil. I have never encountered a case where a Diesel did not produce an equal or greater amount of transportation service for substantially less fuel costs than a steam locomotive burning oil.

We plan to inaugurate 16-hour passenger service between Chicago and Denver, a distance of 1,034 miles, with two 10-car trains. The route of passenger trains is somewhat longer than the one used on the non-stop run I mentioned previously. These two trains each have an assignment of 31,450 miles a month, or 377,410 miles a year. We shall also replace the two three-car trains between Chicago and the Twin Cities with two six-car trains, because the present ones are not large enough. The equipment released will be transferred to places where we feel the improved and expedited service will build up patronage, as it did between Chicago and the Twin Cities.

After evaluating all of the circumstances, some of which I have outlined, we decided upon Diesel-electric locomotives for these four larger trains. We will purchase four 1,800-hp. and two 1,200-hp. units. An 1,800-hp. and a 1,200-hp. unit will be coupled together on each Denver train, thus furnishing 3,000 hp. and the 1,800-hp. units will be used on the Twin City trains. The 1,800-hp. engines will be interchangeable, thus providing flexibility.

The cylinders of all our Diesel engines in road service will be of the same size, as will all traction motors. The spare truck planned for protection at Chicago will fit under the 1,800-hp. as well as the 1,200-hp. units.

In summarizing, we find that the first Diesel-electric high-speed passenger train began operation 16 months ago. The first Diesel-electric sold to an American railroad 11 years ago cost $200 per hp. The present price is about $100 per hp. Steam locomotive construction costs after 100 years of development may have become stabilized because we find no corresponding decrease in their costs. There are reasons to believe that Diesel-electric costs may be further reduced.

The Diesel electrics have a high record of availability, and possess the advantages I have described. It is much too early to make definite statements, but apparently the indications are that the number of Diesel-electrics in railroad service will increase. I say that because I cannot interpret the facts as warranting the prophesy made by some steam advocates concerning the lack of future for Diesel-electrics in rail transportation work.

Steam Power Still Important Factor

This does not suggest the passing of the steam engi —far from it. The builders of conventional steam engines are alert, and today, more than at any previous time, are endeavoring to produce an engine that will make longer runs, give greater availability, and cost less to maintain than existing engines. In addition to that, the designers of a new flash-type, high-pressure steam engine are enthused about their prospects.

At the same time, the companies making four-cycle Diesel engines, apparently in an effort to reduce the weight per horsepower, have been trying to get more power by supercharging, and report considerable success.

The prospects seem to be that railroad managements will have more opportunities than ever before to select from the various types made possible by the genius of the American engineer and resources of the manufacturer, the motive power best suited for different conditions. We should be thankful for this, and earnest in our efforts to meet our obligation by making the right selection.

Odds and Ends . . .

Guarding Notables

Inspector George F. Spencer, of the Pennsylvania police, who retired from railway service on May 9, has a remarkable record in guarding notables during their railway journeys. He has guarded every President since 1906, and, in addition, has served in a like capacity for the kings of England, Siam and Belgium and for Queen Marie of Rumania.

More Railway Lodges

A. S. Thompson, purchasing agent of the Columbus & Greenville, advises that the Albert Pike lodge of Kansas City is not alone in having many railway men in the chairs. He points out that Columbus Lodge, No. 5, A. F. & A. M., is staffed as follows:

Wm. Horton, General Car Foreman, Worshipful Master
A. S. Thompson, Purchasing Agent, Senior Warden
J. R. Watson, Station Agent, Junior Deacon
J. B. Weaver, Rate Clerk, Secretary
W. E. Eubanks, Clerk, Tyler.

All of the above are employed by the Columbus & Greenville.

Hero Honored

A new rail motor coach on the Nacozari, a subsidiary of the Southern Pacific of Mexico, has been named the "Jesus Garcia," in honor of the heroic engineman who gave his life, some years ago, for the citizens of the Mexican town of Nacozari. Two cars loaded with dynamite caught fire on a sidetrack in the heart of town, threatening it and its inhabitants with complete destruction. Garcia was in charge of a switch engine nearby, and, telling his fireman to jump, he coupled the engine to the cars and pushed them out of town. Garcia knew he was doomed, but he managed to get the cars a mile out of town before they exploded, completely obliterating the heroic engineman, his locomotive and cars and the track on which they stood.

Disc Is Unharmed

George E. Hale, chairman of the council of the Astrophysical Observatory of the California Institute of Technology, Pasadena, announces that the record 200-in. telescopic disc has been unpacked and preliminary examination showed it had not been injured in its 3000 mile journey across the continent. This disc was probably the most precious single shipment ever handled by the American railroads. The disc was sent across the continent from the Corning Glass Works, Corning, N. Y., to St. Louis, Mo., over the New York Central and thence by the Burlington and Santa Fe to Pasadena, making the journey at a speed held to a maximum of 25 miles an hour. At Pasadena the disc is to be ground and polished, ready for placement in the world's greatest telescope, a task estimated to take about three years.

Railway Rescues

Employees of the Norfolk & Western wrote another chapter in their record of life-saving recently when a train crew pulled a drowning school girl from the icy waters of a North Carolina creek. When a hurricane-like snow storm blocked the bus on which she was returning home from school, little Ruby Graham, of near Nella, N. C., and several of her schoolmates got out and decided to walk home—six miles through the blizzard. They came to Big Horse Creek and started to cross on an ice-covered foot-log. Ruby slipped and fell into the swift waters. Two of her friends rushed to her aid, grabbed the girl's hand, but were unable to pull her out. Holding on desperately, they screamed for help. At that crucial moment, the girls heard the whistle of a locomotive. And an instant later, a Norfolk & Western passenger train came steaming up the tracks close to the creek. The struggling figures of the girls were sighted by Conductor J. F. Anderson and McKinley Payne, a section workman on the train. Quick as a flash, Conductor Anderson pulled a signal cord. The train stopped. Payne rushed into the stream, and, aided by members of the train crew, pulled the girl from the water and carried her to safety.

NEWS

Net for Three Months Totaled $104,564,978

Return for March reduced by flood expenses of roads in the Eastern District

Class I railroads for the first three months of 1936 had a net railway operating income of $104,564,978, which was at the annual rate of return of 2.11 per cent on their property investments, according to reports compiled by the Bureau of Railway Economics of the Association of American Railroads. In the first three months of 1935, their net railway operating income was $86,366,523 or 1.73 per cent. Operating revenues for the three months totaled $907,861,226, compared with $800,017,238 for the same period in 1935, an increase of 13.5 per cent. Operating expenses amounted to $704,263,531, compared with $624,719,489 for the same period in 1935, an increase of 12.7 per cent. Class I railroads in the three months paid $68,647,464 in taxes, compared with $59,714,984 in the same period in 1935, or an increase of fifteen per cent. For March alone, the tax bill amounted to $25,847,032, an increase of $5,768,718 or 28.7 per cent above the same month in 1935.

Thirty-four Class I railroads failed to earn expenses and taxes in the first three months of 1936, of which 12 were in the eastern district, 5 in southern and 17 in the western district.

Class I railroads for March had a net railway operating income of $35,205,513, at the rate of 1.78 per cent. In March, 1935, their railway operating income was $38,129,871 or 1.91 per cent. Operating revenues for March amounted to $308,303,721 compared with $280,890,307 in March, 1935, an increase of 9.8 per cent. Operating expenses in March totaled $236,578,646 compared with $212,724,302 in the same month of 1935, or an increase of 11.2 per cent.

Class I railroads in the eastern district for three months had a net of $71,309,708, at the rate of 3.03 per cent. For the same period in 1935, their net was $68,662,944, or 2.89 per cent. Operating revenues in the eastern district for three months totaled $469,732,133, an increase of 10.8 per cent compared with 1935, while operating expenses totaled $350,548,548, an increase of 12.5 per cent. Railroads in the eastern district for March had a net of $19,230,842, compared with $26,731,166 in March, 1935. This decrease was largely due to flood conditions in the eastern region.

Class I railroads in the southern district for three months had a net of $17,166,920, at the rate of 2.05 per cent. For the same period in 1935 their net amounted to $12,516,361, at the rate of 1.48 per cent. Operating revenues in the southern district for the three months amounted to $121,589,785, an increase of 14.1 per cent compared with the same period in 1935, while operating expenses totaled $92,539,194, an increase of 10.3 per cent. Class I railroads in the southern district for March had a net of $7,131,540, compared with $5,878,805 in March, 1935.

Class I railroads in the western district for three months had a net of $16,088,350, at the rate of 0.91 per cent. For the same three months in 1935 the railroads in that district had a net of $5,187,218, at the rate of 0.29 per cent. Operating revenues in the western district for three months' period in 1936 amounted to $316,539,308, an increase of 17.5 per cent above the same period in 1935, while operating expenses totaled $261,175,789, an increase of 13.9 per cent. For March railroads in the western district reported a net of $8,843,131, compared with $5,519,900 for the same roads in March, 1935.

CLASS I RAILROADS—UNITED STATES

Month of March

	1936	1935	Per Cent of Increase
Total operating revenues	$308,303,721	$280,890,307	9.8
Total operating expenses	236,578,646	212,724,302	11.2
Taxes	25,847,032	20,078,314	28.7
Net railway operating income	35,205,513	38,129,871	7.7*
Operating ratio—per cent	76.74	75.73	
Rate of return on property investment—per cent	1.78	1.91	
Three months ended March 31			
Total operating revenues	$907,861,226	$800,017,238	13.5
Total operating expenses	704,263,531	624,719,489	12.7
Taxes	68,647,464	59,714,984	15.0
Net railway operating income	104,564,978	86,366,523	21.1
Operating ratio—per cent	77.57	78.09	
Rate of return on property investment—per cent	2.11	1.73	

*Decrease

Cram Elected President of Bangor & Aroostook

Treasurer and clerk of corporation has been in service of that road since 1901

Wingate F. Cram, whose election to the presidency of the Bangor & Aroostook was announced in the *Railway Age* of April 25, has spent his entire business career in the service of that road, having first become associated with it in 1901 as a clerk in the president's office. In his new position Mr. Cram succeeds John Henry Hammond, who has been chairman of the road's executive committee since 1920 and who assumed the presidency in December, 1935, to fiill the unexpired term of the late Percy R. Todd.

Wingate F. Cram

Mr. Hammond continues in the executive committee chairmanship and in addition has been elected chairman of the board of directors. His photograph, together with a sketch of his career, appeared in the *Railway Age* of December 28, 1935, page 876.

Wingate Franklin Cram was born December 4, 1877, at Bangor, Me., and after attending private schools there and Phillips-Andover Academy at Andover, N. H., he entered Harvard University, from which he was graduated in 1900 with an A.B. degree. Following one year at Columbia University Law School, Mr. Cram entered the service of the Bangor & Aroostook on October 1, 1901, as clerk in the

president's office. He served in that capacity until June 9, 1909, when he was elected clerk of the corporation, a position which—along with that of treasurer, to which he was elected on November 1, 1917—he continued to hold until his election to the presidency on April 21.

Mr. Cram has also served as treasurer of the Northern Telegraph Company, the Bangor Investment Company, and the Van Buren Bridge Company, all Bangor & Aroostook affiliates.

R. R. Credit Corporation Announces Additional Distribution

The Railroad Credit Corporation will make a liquidating distribution to participating carriers on May 15 of $4,415,284, or 6 per cent of the contributed fund. Of this amount $2,367,617 will be in cash and $2,047,667 will be credited on carriers' indebtedness to the corporation. This will be the twenty-seventh distribution that has been made since liquidation began June 1, 1933, and will bring the total to 49 per cent of the fund administered by the Railroad Credit Corporation, or $36,058,154. Of this total $17,122,512 will have been returned in cash and $18,935,642 in credits.

International Engine Picture Club

The International Engine Picture Club is sponsoring for Sunday, May 17, an excursion and inspection trip from Philadelphia, Pa., to Baltimore, Md., to visit the Baltimore & Ohio museum at Bailey's, Md., and to inspect that road's modern motive power at Mt. Clare shops and roundhouse. The announcement states that "guide escorts will explain everything to be seen" and "excellent opportunities will be offered for taking photographs or movies." The special excursion train, for which a round trip rate of $2.75 has been obtained, will leave the B. & O. station at Twenty-fourth and Chestnut streets, Philadelphia, at 9 a.m., daylight saving time.

New Seaboard Diesel Cars

The Seaboard Air Line has recently placed in service two new streamlined Diesel-electric power cars of all-welded, alloy-steel construction, built by the St. Louis Car Company and equipped with 660 hp. Electro-Motive Corporation engines. These power units, which are hauling four-car trains between Rutherfordton, N. C., Charlotte, Monroe, and Hamlet, and between Wilmington, N. C., and Hamlet, are divided into three compartments, the first housing the engine and the second and third devoted to mail and baggage, respectively. They are 72 ft. long and 13 ft. 2¼ in. high, while the 660 hp. engines are of the eight cylinder, two cycle type.

Streamliner City of Los Angeles Delivered

The streamliner City of Los Angeles of the Union Pacific was completed and sent out of the shops of the Pullman Standard Car Manufacturing Company on April 21, and after being exhibited in Chicago on April 22 and 23 departed for Los Angeles, from which city it will begin its 39¾-hr. schedule on May 15. On its initial westward trip it was exhibited enroute, the first exhibition at Chicago being attended by over 25,000 persons, and that at Omaha on May 2 by several thousand. Several exhibitions were made between Omaha and Los Angeles. The train will be exhibited at the latter city on May 9 and 10.

Agreement Expected on Dismissal Compensation

Committees representing the railroads and the railroad labor organizations that have been meeting at Washington in an effort to reach an agreement on a plan of dismissal compensation for employees displaced by co-ordination plans or consolidations announced on May 1 that an agreement was "imminent" but several days more were required to settle the exact terms. After meeting separately the committees had another joint session on Wednesday and were expected to meet again. The plan under consideration provided for allowances of a percentage of full pay for varying periods depending upon the length of service, with alternative provision for lump sum payments.

Canadian Relief Work Attacked as Subsidy to Railways

H. H. Stevens, Conservative member of Parliament from Vancouver, attacked the proposal to help the Canadian National and Canadian Pacific to the extent of $3,100,000 by paying the wages of 10,000 men from relief camps who would work on maintenance of way in the House at Ottawa last week.

Declaring that the Canadian Pacific was receiving aid from the government for maintenance of way work; being given a subsidy, and that he was not willing "to be kind to the Canadian Pacific much longer if they abuse the Canadian National the way they have in the past four or five years," Mr. Stevens admitted there was overbuilding on the part of the Canadian National, but there was, he said, over-extension also on the part of the Canadian Pacific.

"This is not a subsidy to the railways in any manner, shape or form," declared the Minister of Railways (Hon. C. D. Howe), quite emphatically. The government had been faced by a serious problem of finding work for the single homeless men who had been in the relief camps, and the railways had come to the aid of the government in making work available to a maximum of 5,000 men for each road. "I must strenuously object to any man standing in the House," said Mr. Howe, "and saying that we are subsidizing the Canadian Pacific or the Canadian National."

Headlight Power Sufficient

Action was brought under the Federal Employers' Liability Act for the death of a signal maintainer run down by a passenger train moving down grade at sixty miles an hour after dark. The only act of negligence submitted to the jury was failure to equip the locomotive with a headlight of the illuminating power required by a rule of the Interstate Commerce Commission as authorized by the Boiler Inspection Act. The Supreme Court of the United States held that examination of the record showed that there was nothing in the evidence substantially supporting a finding of negligence or showing that the headlight failed to illuminate the track 800 ft. ahead or was below the required standard. Judgment for plaintiff in the Supreme Court of Minnesota was reversed. Chicago Great Western v. Rambo. Decided April 27, 1936. Opinion by Mr. Justice Brandeis.

Routing Bill on Senate Calendar

The Senate committee on interstate commerce on April 29 made a favorable report to the Senate on S. 1636, a bill recommended by Co-ordinator Eastman, to amend Section 15 of the interstate commerce act to provide that "the elimination of any existing through route or joint rate, fare, charge, or classification without the consent of all carriers parties thereto or authorization by the commission shall be deemed prima facie unreasonable and contrary to the public interest." The bill as reported would also have given the Interstate Commerce Commission power to prescribe minimum joint rail-and-water rates but Chairman Wheeler of the committee explained in the Senate on May 4 that this had been included by a clerical oversight because it had been agreed at the hearings that the committee should not take action on this part of the bill.

Green Diamond Schedule to Be 4 Hrs. 55 Min.

The Green Diamond, streamlined train of the Illinois Central, will be operated on a schedule of 4 hrs. 55 min. between Chicago and St. Louis (294.2 miles in 295 minutes). It is to be placed in operation on May 17. The train will leave St. Louis at 8:55 a.m. and arrive in Chicago at 1:50 p.m.; on its return the same day it will leave Chicago at 5:00 p.m. and arrive in St. Louis at 9:55 p.m. The train will make seven intermediate stops—Northbound at Washington Avenue, St. Louis (flag stop); Springfield (Adams Street); Clinton; Gibson City; Kankakee; 63rd St.; and 53rd St. (Chicago); and southbound at 53rd St.; 63rd St., Kankakee; Clinton; Mount Pulaski; Springfield (Adams Street); and Washington Avenue, St. Louis (flag stop).

U. S. C. of C. Favors Principle of Voluntary Consolidations

The following resolution on the subject of railroad consolidations was adopted by the Chamber of Commerce of the United States at its annual meeting in Washington on April 30:

"In the 16 years which have passed since the transportation act of 1920 was enacted the extensive plan of railroad consolidations which was contemplated has not made the progress which was expected. A report of a special committee which is before this meeting makes recommendations which, if put into effect, would serve to facilitate consolidations. In these recommendations we concur.

"The principle of voluntary consolidation of railroads, we therefore believe, should be preserved. Congress should now release the Interstate Commerce Commission from its obligation to maintain a comprehensive plan of consolidation of all railroads into a limited number of sys-

tems, preserving the benefits of all of the studies which have been made in some less exacting form for indicating the commission's views as to the public interest. For the purpose of eliminating unnecessary and wasteful competition and furthering efficiency of service, railroads should be permitted and encouraged by law and by the commission to effect consolidations, always subject to approval by the commission as to the public interests which are involved."

S. T. Bledsoe, president of the Atchison, Topeka & Santa Fe, was elected a director.

Transport Courses at Iowa State

Symposiums on highway safety, traffic control, transportation economics, and the co-ordination of transportation agencies will be offered as a special feature of the graduate courses in highway engineering to be given during the coming summer at Iowa State College, Ames, Iowa. The symposiums will be presented by the regular teaching staff and by a staff of visiting lecturers. Included in the list of the latter is Ralph Budd, president of the Chicago, Burlington & Quincy.

The college is also sponsoring a highway safety conference to be held from June 29 to July 2. This conference, while open to the public, "is planned particularly for traffic officials in county, city or state departments; traffic managers of large fleets of trucks and cars; and the leaders and members of organizations interested in highway safety."

Railroads Ask Changes in Tax Law

R. V. Fletcher, general counsel of the Association of American Railroads, and Fred W. Sargent, president of the Chicago & Northwestern, testified before the Senate finance committee on May 6 to urge changes in the pending revenue bill which provides for increased taxes on corporate income not distributed to stockholders in the form of dividends. Mr. Sargent particularly asked for changes for railroads about to emerge from reorganization to allow them time to build up a surplus reserve. The bill provides for a 15 per cent tax on the net income of companies in receivership or bankruptcy and he asked the committee to give favorable consideration to an extension of the 15 per cent provision for a reasonable period of time after reorganization. This, he said, would help to remove an almost impossible situation with relation to reorganization.

Senate Committee Favors New Grade Crossing Program

A favorable report on the Hayden-Cartwright highway bill was submitted to the Senate on April 30 by its committee on postoffices and post roads, including the provision authorizing an appropriation of $50,000,000 for grade-crossing improvements for the fiscal year 1938 and the same amount for 1939, thus providing for a new program of federal expenditures for this purpose to follow the $200,000,000 program now under way. The bill had been passed by the House. At the suggestion of Senator Lonergan, of Connecticut, the committee recommended that a proviso be added to emphasize the necessity for protective devices at railroad and highway grade crossings and at drawbridges by requiring that on all new highway construction with federal funds adequate devices approved by the Bureau of Public Roads must be installed.

National Machine Tool Builders Association Honored

The National Machine Tool Builders Association has been presented the American Trade Association Executives Award for the outstanding achievement by a trade association during the past three years. The presentation was made by Secretary of Commerce Roper to Herman H. Lind, general manager of the National Machine Tool Builders Association, at a recent dinner in Washington. The award, it was stated by Secretary Roper, was won because of the Association's helpful work not only to the machine tool and related industries but also to the general public, chiefly through the courageous staging of the Machine Tool Show in Cleveland, Ohio, last Fall. Seven other prizes—honorable recognition certificates — were awarded to other associations, among which were the American Institute of Steel Construction and the Automobile Manufacturers Association.

Steam Railway Accident Statistics January, 1936

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of January, 1936, now in preparation for the printer, will show:

Item	Month of January 1936	1935
Number of train accidents	818	642
Number of casualties in train, train-service and nontrain accidents:		
Trespassers:		
Killed	135	139
Injured	168	186
Passengers on trains:		
(a) In train accidents*		
Killed	1	....
Injured	82	110
(b) In train-service accidents		
Killed	....	3
Injured	139	157
Travelers not on trains:		
Killed	2	1
Injured	72	80
Employees on duty:		
Killed	66	59
Injured	1,869	1,466
All other nontrespassers:†		
Killed	162	130
Injured	727	629
Total—All classes of persons:		
Killed	366	332
Injured	3,057	2,628

* Train accidents are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

† Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and non-trespassers*, were as follows:

Number of accidents	444	377
Persons:		
Killed	164	124
Injured	543	470

The Canadian Roads in March

The Canadian Pacific in March earned net operating revenue totaling $1,347,733, as compared with $1,147,235 for March of last year, an increase of $300,497. Gross for the month at $10,679,577 showed an increase of $1,163,969 over March of last year, while operating expenses at $9,331,843 showed an increase of $863,471.

For the first quarter of this year, the road shows net operating revenue at $2,827,703, as compared with $2,101,694 for the corresponding three month period of 1935, an increase of $726,008. Gross for the quarter at $29,283,992 showed an increase of $2,845,721 over the same period of last year, while operating expenses at $26,456,289 showed an increase of $2,119,712.

The Canadian National in March earned net operating revenue of $941,533, as compared with $1,095,485 for March, 1935, representing a decrease of $153,953. Operating revenues amounted to $14,470,710, against $13,841,344 for March, 1935, an increase of $629,365, while operating expenses at $13,529,177 showed an increase of $783,318, when compared with the total for the same month of last year.

For the first quarter, net revenue is shown at $76,742, against $481,699 for the same period of last year, a decrease of $404,957. Operating revenues for the quarter at $40,279,771 showed an increase of $1,909,034, while operating expenses at $40,203,029 showed an increase of $2,313,991.

Pennsylvania Truck Lines Asks Rehearing

The Pennsylvania Truck Lines, Inc., formerly the Pennsylvania Transfer Company of Pittsburgh, Pa., a motor carrier subsidiary of the Pennsylvania, has applied to the Interstate Commerce Commission for a rehearing on its application for authority to acquire the properties of the Chicago-Cincinnati Motor Freight Lines. J. Edward Davey, chief of the section of finance of the commission's Bureau of Motor Carriers, had recommended in a proposed report that the application be denied on the ground that it had not been affirmatively shown that the transaction would "promote" the public interest. The company now desires to submit further evidence which it believes will show more fully than that presented at the original hearing that it proposes to improve the service and operation of the Chicago-Cincinnati line by the addition of such equipment, personnel, and other facilities as may be necessary from time to time to meet the public requirements for service in connection with a truck-rail co-ordination program.

German Railroads' Passenger Business Increased in 1935

German railroads reported an increase of 9.5 per cent in the number of passengers carried in 1935 as compared with 1934, according to a recent statement from the German Railroads Information Office, New York. The increase was 20.1 per cent over 1933.

Passengers carried last year totaled 1.5 billion, while the passenger miles totaled 24.5 billion, the latter being an increase of 13.5 per cent over 1934 and 31.2 per cent over 1933. At the same time the average journey per passenger rose from 15.9 miles to 16.5 miles.

The statement points out that last year 286.4 miles of track were added to the railway system, the taking over of Saar railroads being mainly responsible for the addition. At the close of 1935 the Ger-

man railroads owned 21,656 locomotives, 1,561 rail motor cars, 60,341 passenger cars and 596,598 freight cars. The statement calls attention to German pioneering with streamlined trains and adds that "streamlined Diesel-electric trains and streamlined steam locomotives have been installed in large numbers last year."

Historical Society to Visit Reading Shops

The New York Chapter of the Railway and Locomotive Historical Society, Inc., will conduct its first inspection trip of the season on Sunday, May 17. Leaving New York at 7:45 a.m., Eastern Standard Time, from the Twenty-Third street ferry slip, and at 8 a.m. by the Liberty street ferry, the party will proceed by the Central of New Jersey and the Reading to Reading, Pa., to visit and inspect the shops and enginehouse of the Reading. Returning, the party will arrive at Liberty street, New York, at 8:37 p.m., Eastern Standard Time.

A round-trip fare of $2.50 will be charged. Reservations must be made not later than May 13. Reservations for non members must be accompanied by an additional fee of 50 cents per person.

New York Railroad Club's "Grade Crossing Night" May 15

The next meeting of the New York Railroad Club, to be held on May 15 at 7:45 p.m. at the auditorium of the Engineering Societies building, 29 West Thirty-ninth street, New York, has been designated "Grade Crossing Night." Leon G. Godley, member of the New York Transit Commission, will act as chairman, and the meeting's program, the announcement says, will include "five snappy talks on railroad and highway traffic crossings by experts," as follows: Grade Crossing Protection, by A. H. Rudd, chief signal engineer, Pennsylvania; The Legal Aspects of Grade Crossing Elimination in New York State, by Louis J. Carruthers, general attorney, Long Island; The New York Central's West Side Improvement, by Richard E. Dougherty, vice-president, New York Central; Grade Crossing Elimination Through Federal Aid, by Thomas H. MacDonald, chief of the U. S. Bureau of Public Roads; Grade Crossing Elimination on Long Island, by Edward W. Foley, president, Faircroft Engineering Corporation. Also, there will be a sound motion picture entitled "Safety on New Jersey Highways," and entertainment by the Keystone Quartette of the Pennsylvania. The club is extending to all who are interested in the grade crossing problem an invitation to attend the meeting, which will be the last until next Fall.

Reduced Passenger Fares to Become Effective June 1

Reductions in passenger fares in the eastern district to the new basis prescribed by the Interstate Commerce Commission, two cents a mile in coaches and three cents a mile in Pullmans, are to be made effective on June 1 under tariffs filed with the commission by the principal eastern railroads under protest. The commission's order was to be effective on or before June 2 but the railroads have decided to make the rates effective the first of the month.

The tariff publications are temporary ones, authorized by a special permission order issued by the commission for 90 days, making reference to a master conversion table, but are to be superseded by regular tariffs after 90 days. The Baltimore & Ohio and affiliated roads had already filed their tariffs but those of the other eastern roads were accompanied by a letter saying they were being filed "under duress of the commission's order" and that the railroads "do not thereby admit, but on the contrary deny, the validity of said order, and it is their intention to institute legal proceedings to test the validity thereof." It was also stated that they were being filed in order to escape the penalties in the interstate commerce act for failure to comply with the order.

With the reductions in the standard fares most of the special reduced fares will be discontinued, but there will be some exceptions. The Baltimore & Ohio has served notice of its intention to continue reduced summer tourist fares and Sunday excursion fares, and the other eastern roads will follow its example. The special convention fares are usually published for less than 30 days and may be discontinued on three days' notice, and the roads have indicated their intention to discontinue them. The commission has issued special permission to discontinue on three days' notice some summer school fares which had already been published.

C. N. R. Chairman Queried by Railway Committee

Answering questions by the railway committee in Parliament at Ottawa last week, Hon. Charles P. Fullerton, chairman of the Canadian National board of trustees, stated that hotels showed an operating profit of $101,770 last year. Total investment in hotels was $35,428,000. He explained the opening of the Bessborough Hotel in Saskatoon last year, saying: "We believed that owing to improved conditions we could run the hotel with a very small loss." The Bessborough had been opened in December, and up to the end of March showed a loss of $7,000. The manager expected a total loss of $10,000 on the year's operations. A loss of $30,000 would have been inevitable if the hotel had remained closed, because heating and taxes cost that much.

In reply to a question about the C. N. R. hotel which has not been opened he said, "we are studying the Vancouver situation. It's a puzzle what to do about it. If we open the hotel in Vancouver we will run into an enormous loss. We can't help it."

In answer to some criticism of the abuse of pass privileges, Railway Minister C. D. Howe told the committee issue of many passes was controlled by statute. Members of Parliament could help by not abusing their privileges.

The committee was informed it would cost between $5,000,000 and $6,000,000 to perform work on the proposed Montreal terminals so they could be used for trains. This would not, it was stated, by any means finish construction of the terminals.

In order to give employment, as well as to supply adequate terminal facilities in Montreal, A. M. Young (Lib., Saskatoon) suggested going on with the terminals. Chairman Fullerton promised a report covering the situation when the committee meets this week.

Railways Minister Howe told the committee the government was considering eliminating some of the "fictitious items" now helping build up the capital structure of the Canadian National. He hoped to be able to announce a decision before the end of this session.

Renewed Railroad Buying

Renewed railroad buying in anticipation of improved railroad traffic is reflected in a report on equipment orders made public by the Association of American Railroads. New freight cars of all types on order by the Class I railroads totaled 13,562 on April 1, compared with 482 cars on order at the same time last year. New steam locomotives on order April 1, this year, totaled 52 compared with one on the same date last year. Twenty-four new electric locomotives were on order this year, compared with 61 on order April 1, 1935. New passenger equipment on order April 1, this year, called for 69 cars as against 76 cars on the same day last year.

In the first three months of this year, 2,984 new freight cars were placed in service compared with 568 cars in the corresponding three months of 1935. For the entire year of 1935 there were 8,903 new freight cars placed in service. Three new steam locomotives were installed in the three months compared with 12 in the same period last year. One new electric locomotive was placed in service in the first three months of 1936 compared with 30 in 1935 and 6 in 1934. Freight cars and locomotives leased or otherwise acquired are not included in the above figures.

In addition to increased orders placed for new cars and locomotives, substantially larger sums have been authorized this year for general improvement work on track, bridges, structures and other equipment. Nearly twice as many tons of rail were ordered during the first three months of this year as in the first three months of 1935.

Modified Pick-Up and Delivery Plan Approved by I.C.C.

Eastern railroads have been authorized by the Interstate Commerce Commission to establish the modified pick-up and delivery service proposed in a petition dated April 14 in place of the general plan which was to have gone into effect on April 1 but was suspended by the commission on protest of the trucking interests. At the same time the commission declined for the present to order a nation-wide investigation of pick-up and delivery service as asked by the truckers.

On April 14 the Pennsylvania, the Erie, the Boston & Maine and certain other lines in official territory petitioned the commission for modification of its order in Investigation and Suspension Docket No. 4191, Pick-up and Delivery in Official Territory, or by special permission to permit them to establish generally throughout official territory free pick-up and delivery service of less-than-carload and any-quan-

tity shipments of freight regardless of the length of the line haul. This petition merely contemplated the extension of the free pick-up and delivery service of these lines which is at present in effect quite generally for hauls of 260 miles and less so as to include hauls beyond that distance without charge over and above the line-haul rate, but did not propose any allowance to shippers for performing their own drayage service similar to that suspended. Subsequently the Baltimore & Ohio filed a request that any permission granted be extended to embrace that line. Upon consideration of this petition and the replies thereto, and the application of the Baltimore & Ohio, the commission has issued Special Permission No. 152919, dated May 4, authorizing petitioners and the Baltimore & Ohio to establish such free pick-up and delivery service on 10 days' notice. This action will not affect the investigation of the issues raised in Investigation and Suspension Docket No. 4191, and that proceeding will be set for hearing and determined in the regular course.

The American Trucking Associations, Inc., and Brooks Transportation Company, Inc., under date of April 13, petitioned the commission to institute on its own motion a nation-wide investigation of all contracts, ownerships and controls of trucking operations by railroads, and all free and below-cost collection and delivery services and allowances therefor by railroads. After consideration of the petition and replies thereto the commission has concluded at the present not to institute such a general investigation.

"Outs" in Canada Demand Solution of Railway Problem

The Conservative (Opposition) leader in the House of Commons at Ottawa and former Prime Minister, Rt. Hon. R. B. Bennett, tossed a bomb into the political camp last week during his speech on the budget or annual statement on the country's financial position and proposals for new taxation submitted to parliament the previous week by Hon. Charles Dunning, Minister of Finance. Mr. Bennett told the Liberal government that if they would try a drastic step to solve the railway problem they would get the support of himself and his party in the House. There was no mention of amalgamation or unification, but his remarks were interpreted as meaning that if the Liberals would go at least as far as unification he would back them.

This proposal, though sounding important in the country, is not taken seriously by the King Government. Its members recall that in the 1930 campaign, when Mr. Bennett was elected to office, his slogan on the railway question was "Amalgamation never; competition ever." Then when he became Prime Minister he named the Duff Commission to probe the railway problem and it recommended against amalgamation or unification, and the legislation he later introduced consisted largely of setting up machinery for voluntary and compulsory "co-operative economies" as between the Canadian Pacific and the Canadian National.

In the last election campaign he declared the railway problem was still bad, and he proposed if returned to power to name some kind of "Brain Trust," consisting of government officials and experts. Liberals, now in control of the government, insist that it is not very convincing to see the railway problem so darkly when out of office that one is ready to stand for unification, but this proposal was always frowned upon when in office. Premier King is likely to answer this offer of Mr. Bennett later this session.

Claim Prevention Education on the G. T. W.

"Time, Interest and Inclination."—The freight house man who is not at first interested in these italicized words should visit the Grand Trunk Western, where the Claim Prevention Department issues occasional circulars for the use of freight house employees in educating themselves. The men also get education in the use of language as well as in how to handle fragile packages.

The quoted phrase is taken from a note concerning damage bills paid for broken furniture (new furniture) in crates which have passed perhaps three transfers with damaged parts overlooked. The neglectful practice is assumed to have been due to *lack* of one, two or all of these three things. In less gentle terms, the censure might be worded: You did not take time enough—your judgment was poor; You were too much interested in wool-gathering (or some other wrong purpose) to be interested in your duty; You lacked inclination because you were lazy or thoughtless.

And the circular proceeds to announce an intensive campaign.

This use of language which might be open to the objection of going over the recipients' heads appears in these circulars in varied forms. In contrast with the typical railroad circular, the chief virtue of which is brevity, one G.T.W. mimeograph lecture begins: "The makeup of the human brain is such that only by constant reiteraton or repetition can ideas be forced through the nebulous portals of our mental storehouse and find a place therein, so that we can say that we have actually grasped an idea or assimilated a certain group of causes and their logical effects." Clerks who have assimilated the contents of the circulars, agents who have made a study of closer and more careful supervision, yardmen who have studied the rough handling problem, yard clerks and icing inspectors watching the protection of perishable cars, car inspectors checking defects in equipment, etc., are exhorted to be instant, in season and out of season, to educate their fellow employees. (They are thanked for what they have already accomplished.)

Freight claims paid by this road for the year 1935 amounted to $92,742, which is equal to less than one-half of one per cent of the company's gross revenues from freight and switching; the best record that the road has ever made on an equal volume of business. It is not so good, however, that V. C. Palmer, supervisor of the claim prevention department, lets up the least bit in his campaign to

"CUT LOSS AND DAMAGE TO ONE-QUARTER OF ONE PER CENT—IT CAN BE DONE."

One of the emphasized paragraphs in this circular is that calling attention to the possibility of a fine from $1,000 to $5,000 or imprisonment, as the penalty to be imposed on the carrier or carrier's employee who accepts empty whiskey barrels from which government stamps have not been properly removed.

Results of Burlington Movie Experiment

Ninety-six per cent of the persons who viewed motion pictures shown by the Chicago, Burlington & Quincy in co-operation with Films Incorporated, during a two weeks' experiment, would like to have motion pictures a permanent feature on trains. The two-reel picture used in the experiment was on 16-millimeter film and the size of the screen used was 4 ft. by 3 ft. It was shown in the dining car at times when that car would otherwise have been idle. The showing of the picture consumed 1 hr. 30 min. An evening performance was given for nine consecutive evenings on the Ak-Sar-Ben, which leaves Chicago at 6:15 p.m., while afternoon and evening performances were given on two round trips of the Aristocrat, which leaves Chicago at 10:30 a.m. and Denver at 5:00 p.m., making a total of 17 performances.

An admission charge of varying nominal amounts was made for most of the performances; this for the double purpose of testing the picture company's belief that passengers will pay to see a picture on a train as readily as in a theater and for policing the attendance and preventing overcrowding. A number of performances were, however, given without charge as a part of the experiment. A card telling of the arrangement and mentioning the admission price, if any, was distributed throughout the train at an appropriate time to passengers whose hat checks or Pullman reservations indicated that they were destined beyond the period of the show and then a short time before the performance the dining car waiter tendered up to 35 admission tickets to those desiring to attend, starting in the sleeping cars.

Following the performance those attending were asked to fill out a questionnaire but answers were received from only 68 per cent of the 461 attending, this being due in part to the fact that on several evenings the picture was not finished until just before reaching Galesburg, where the diner was to be cut out. Of those answering the questionnaire, 96 per cent said they would like to have motion pictures a permanent feature on trains. Answers to the question, "What admission charge would you consider appropriate?" varied, the general average of 263 suggested admission charges being 26 cents. At eight free performances the majority of those answering the questionnaire suggested an admission charge of some amount.

The questionnaire also asked, "Was there enough interference from noise or motion of the train to detract from your enjoyment?" and of those answering the questionnaire 80 per cent answered in the negative and 16 per cent in the affirmative. Preference for type of picture was: All kinds, 66; comedy, 56; musical comedy, 49; musical, 33; mystery or drama, 22; news reel, 11; travelogue, 9; educational, 6; western, 5.

Equipment and Supplies

1936 Equipment Orders Exceeding 1935 Totals

Locomotive and passenger car volume already above last year's 12-months' business

Domestic equipment orders reported in April issues of *Railway Age* brought the 1936 totals to date for locomotives and passenger-train cars above 1935's twelve-months' figures, while the current year's business in the freight car market had by the close of last month reached a volume where the conversion of outstanding inquiries into orders will place it also above that done throughout last year. Reflecting the same upward trend, rail orders for the first one-third of this year have involved a total tonnage equal to more than 90 per cent of that placed throughout 1935.

In last month's issues, including that of May 2, orders were placed with outside builders or in company shops for 15 locomotives, 3,650 freight cars and 50 passenger-train cars. The bulk of this business went to builders, the only company-shop orders being two, involving a total of 750 freight cars. April orders for rail totaled 90,483 tons.

The 15 locomotives ordered last month brought the year's total to date to 88, not including power units for four streamlined trains. This compares with 83 locomotives ordered throughout 1935. Involved in this year's business are 69 steam locomotives, as compared with only 28 of this type ordered during 1935's twelve months. Also, there has been this year an export order for five steam locomotives and domestic inquiries were outstanding on April 30 for 13 of that type.

The 3,650 freight cars ordered in April, together with the order for 777 placed since the close of the month and reported elsewhere in these columns, brings the total to date to 13,340. When inquiries outstanding on April 30 for 8,675 freight cars, and those just issued for another 3,800 as reported elsewhere in these columns, are converted into orders, the 1936 business in this connection will be well above the 18,699 cars ordered during the entire year 1935. Furthermore, 400 box cars have been ordered this year for export as compared with 110 involved in all 1935 export orders.

Last month's order for 50 coaches brought to 87 the 1936 total of passenger-train car orders. This compares with 63 ordered throughout last year. Also, there are this year's orders for five streamlined trains, as compared with three last year, and the inquiries outstanding on April 30 for 9 passenger-train cars.

With the tonnage placed in April, rail orders thus far in 1936 total 450,125 tons as compared with the 495,300 tons ordered throughout last year.

Domestic Equipment Orders Reported in Issues of The Railway Age in April, 1936

LOCOMOTIVES

Date	Name of Company	No.	Type	Builder
April 4	LaSalle & Bureau County...	1	Propane-electric	Fate-Root-Heath Co.
April 4	Joplin-Pittsburgh	1	Propane-electric	Fate-Root-Heath Co.
April 11	Louisiana & Arkansas.....	5	2-8-2	Lima Locomotive Works
April 11	New York Central.....	7	Diesel-electric	Electro-Motive Corp.
May 2	Alton & Southern.....	1	2-8-2	Baldwin Locomotive Works

FREIGHT CARS

Date	Name of Company	No.	Type	Builder
April 18	Wheeling & Lake Erie.....	50	Automobile	Company Shops
April 18	Erie	500	Box	American Car & Foundry
		200	Automobile	Magor Car Corp.
		100	Automobile	Greenville Steel Car
April 18	Pacific Fruit Express.....	500	Refrigerator	General American Car
		500	Refrigerator	American Car & Foundry
		500	Refrigerator	Pacific Car & Foundry
		500	Refrigerator	Pullman-Standard
		700	Refrigerator	Company Shops
April 25	Seaboard, Air Line.....	100	Phosphate	Pullman-Standard

PASSENGER-TRAIN CARS

Date	Name of Company	No.	Type	Builder
April 11	New York, New Hav. & Hart.	50	Coaches	Pullman-Standard

FREIGHT CARS

THE NORFOLK & WESTERN is requesting bids from manufacturers for the construction of 1,000 all-steel coal cars of 57½ tons' capacity.

THE SOUTHERN PACIFIC is inquiring for 2,800 freight cars, as follows: 1,750 box cars, 750 automobile cars, 200 flat cars, and 100 gondolas.

THE NEW YORK, CHICAGO & ST. LOUIS has placed orders for 777 cars, divided as follows:

Number Ordered	Capacity	Type	Builder
500	50 ton	Box	General American
200	50 ton	Gondola	Bethlehem Steel
50	50 ton	Flat	Bethlehem Steel
25	70 ton	Gondola	Bethlehem Steel
2	100 ton	Flat	Amer. Car & Fdy.

Inquiry for this equipment was reported in the *Railway Age* of March 28.

Jersey Politicians Pass "Racket"

Now that Motor Vehicle Commissioner Magee has recalled the ridiculous Gold Badges, it is to be hoped that the Legislature will withdraw the innumerable State passes on New Jersey railroads and pay the expenses of those rightfully entitled to the privilege. There's no more reason why any State employee should hold a railroad pass than that he be favored, in similar fashion, by all other utilities. He might, with equal propriety, be excused from paying for gas, electricity, water, telephones and so on.

—H. W. K., in the Woodbridge (N. J.) Independent

IRON AND STEEL

THE SOUTHERN has ordered 3,700 tons of rails from the Tennessee Coal, Iron & Railroad Company.

THE KANSAS CITY SOUTHERN has ordered 3,000 tons of rails from the Carnegie-Illinois Steel Company, and 1,000 tons from the Inland Steel Company.

THE BOARD OF PUBLIC SERVICE OF ST. LOUIS awarded a contract for the fabrication and delivery of 950 tons of structural steel for work on the South Valley Junction railroad approach to the St. Louis Municipal Bridge across the Mississippi at East St. Louis, Ill., to the Mississippi Valley Structural Steel Company. A contract for the painting and erection of the steel was placed with the Ben Hur Erection Company. Contracts were also awarded for furnishing and delivering 660 tons of 100-lb. rails, 1000 pairs of rail joint bars, 180 insulated rail joints, 172 kegs of track bolts, 1440 kegs of cut track spikes, 27,000 tie plates, 6899 anti-creepers, clamps, clamp bolts, with the Carnegie-Illinois Steel Corporation, the Woodings-Verona Tool Works, and the Ra· apo-Ajax Corporation.

MISCELLANEOUS

PACIFIC FRUIT EXPRESS.—An order for 3,500,000 sq. ft. of insulation for the 2,700 new refrigerator cars for this company has been placed with the Dry-Zero Corporation, Chicago.

NORTHERN PACIFIC.—Timken bearings and boxes will be used on the driving axles of 8 of the 12 class 4-6-6-4 locomotives now being built for this road by the American Locomotive Company. Timken bearings and boxes will be used on the engine trucks, trailer trucks and tender trucks of all 12 of these locomotives.

WABASH.—The District Court at St. Louis, Mo., has authorized the receivers for the Wabash to expend $377,537 for repairs and improvements to various stretches of trackage in Illinois and Missouri, including the replacing of gravel ballast, the raising of tracks and bridges and the widening of embankments between Huntsville, Mo., and Clifton; between De Witt, Mo., and Carrollton; between Birmingham, Mo., and North Kansas City; between Orland Park, Ill., and Manhattan; and between Blue Ridge, Ill., and Lodge.

Supply Trade

James C. Travilla, of the mechanical department of the **General Steel Castings Corporation,** with headquarters at Granite City, Ill., has been appointed mechanical engineer in charge of the section of the mechanical department at the Commonwealth plant in that city, to succeed **W. O. Ashe,** who has been appointed sales engineer in the western district sales department at Granite City.

A. E. Walker, general sales manager of the **Republic Steel Corporation,** Cleveland, Ohio, has been elected president of the **Truscon Steel Company** to succeed **Julius Kahn,** who has been elected a vice-president of the Republic Steel Corporation in charge of production developments. Mr. Walker will continue as the sales manager of the Republic Steel Corporation.

J. W. Braffett, for the past seven years Detroit, Mich., representative of the Oliver Iron & Steel Corp., has joined the Detroit sales staff of the **Republic Steel Corporation,** Upson Nut division, with headquarters in the Fisher building; **L. L. Caskey** has been appointed district sales manager for the Republic Steel Corporation in the Philadelphia, Pa., territory, succeeding **J. B. DeWolfe,** who has been transferred to the general offices at Cleveland, Ohio, to assist **George E. Totten,** manager of sales of the Tin Plate division.

J. W. Lewis, since 1923 assistant to the president, has been elected treasurer of the **General Electric Company** to succeed **R. S. Murray,** who retired on May 1 because of ill health, after 43 years' service with the company. Mr. Lewis is a native of Michigan. For five years he worked for the New York Central, and in 1901 joined the newly formed American Locomotive Company. In 1910, he joined the General Electric Company at Schenectady, N. Y., organizing the statistical department. He was head of this department as

J. W. Lewis

chief statistician until April, 1921, when he was appointed assistant comptroller of the company, with headquarters at New York City, and since October, 1923, he was assistant to the president. Mr. Lewis is a director of the General Electric Contracts Corporation, and of the General Electric Realty Corporation. R. S. Murray joined the General Electric Company in 1893 at Boston, Mass., and in 1907 he went to Schenectady, N. Y., as auditor of accounts receivable. He was elected assistant treasurer in 1910 and since January, 1925, he served as treasurer.

Charles R. Robinson, first vice-president and general manager of sales and a director of the **Inland Steel Company,** Chicago, has resigned. Mr. Robinson started his business career in 1890 as a salesman of tool steel for Park Brothers & Co. In 1900, he entered business for himself, handling various steel products on a brokerage basis. In 1904, he entered the employ of the Inland Steel Company as a salesman, becoming assistant general manager of sales in 1906. In October, 1908, he resigned from the Inland Steel Company to become district sales manager for the Lackawanna Steel Company at Chicago, and in 1910 was transferred to New York as general manager of sales. In the following year his headquarters were transferred to Buffalo, N. Y. He held the latter position until 1918, when he was

Charles R. Robinson

elected vice-president in charge of sales. In January, 1922, he returned to the Inland Steel Company, coincident with that company's entrance into the rolling of standard section heavy T-rails, becoming vice-president in charge of railroad sales. In August, 1935, he was elected first vice-president and general manager of sales, which position he has held until his resignation.

W. D. Cloud, sales engineer for the **General Railway Signal Company,** has been appointed assistant resident manager of its New York office in charge of the eastern district territory. Mr. Cloud was born in Iowa on July 4, 1886, and was educated in the public and high schools at Davenport, Iowa. His first railroad experience was in the engineering department as rodman on preliminary surveys, and after serving in all capacities up to instrument man in Iowa, Tennessee, Texas and Louisiana, he was draftsman and assistant engineer on railway maintenance. In December, 1909, he went with the Atchison, Topeka & Santa Fe as draftsman in the signal department at Topeka, Kan. Subsequently he became chief draftsman, construction foreman, and assistant supervisor, handling all classes of estimating, design and construction pertaining to signal work. On April 1, 1915, he resigned

W. D. Cloud

to go as circuit draftsman with the Central of Georgia, at Savannah, Ga. Later he was promoted to inspector, which position he held until he became sales engineer for the General Railway Signal Company in August, 1920, reporting to the New York office. His recent appointment became effective April 27.

OBITUARY

Edward H. Fisher, connected with the sales department of the American Car & Foundry Company for 28 years, died on April 25, in New York hospital, after an illness of over two years.

Harry L. Austin, assistant to the chairman of the Finance committee of the United States Steel Corporation, died on May 1, at his home in Summit, N. J., at the age of 66 years.

J. O. Brumbaugh, representative of the Gold Car Heating & Lighting Company, Brooklyn, N. Y., died after a prolonged illness at his home in South Ozone Park, N. Y., on April 30, at the age of 70. Mr. Brumbaugh had been with this company for over 35 years.

Claude Bethel, manager of the Railway Engineering department of the Westinghouse Electric & Manufacturing Company and a contributor to many important developments in the electric transportation industry, recently died after a week's illness of pneumonia.

TRADE PUBLICATION

MATERIAL HANDLING.—A 24-page illustrated booklet, published by The Electric Storage Battery Company, Philadelphia, Pa., under the title "The Efficient, Economical Method of Handling Material," deals with the use of electric industrial trucks and tractors equipped with Exide Ironclad batteries. The specific subjects covered are the cutting of production costs, fire hazards, economic advantages and adaptability of electric trucks and characteristics of the Ironclad battery as applied to truck and tractor service.

Construction

BOSTON & MAINE.—A contract has been given to S. A. Scullen, Inc., Cohoes, N. Y., at $48,963, for the construction of a substructure, approaches, etc., and to the Bethlehem Steel Company at $12,910 for the superstructure in connection with the elimination of the Pease crossing of this road at Buskirk station, Hoosick, N. Y.

CHICAGO, BURLINGTON & QUINCY.—A contract has been awarded to the Edward Peterson Company, Omaha, Neb., for the grading and construction of bridges for about 4.72 miles of eastbound second track between Indianola Jct., Iowa, and Lucas. This project will require the construction of a bridge across White Breast creek, which will consist of one 100-ft. deck-plate girder span and two 60-ft. deck-plate girder spans on concrete piers.

DELAWARE, LACKAWANNA & WESTERN.—This road has let contracts for grade crossing elimination work as follows: To the Franklin Contracting Company, Newark, N. J., elimination at Comly road, Lincoln Park, N. J.; H. L. Harrison & Son, Newark, elimination at Springfield avenue, Berkeley Heights, N. J.; F. F. Baker, Upper Montclair, N. J., for elimination at Dewey avenue, Wharton, N. J.; and to H. J. Williams, Inc., York, Pa., for elimination at Mount Pocono, Pa.

NEW YORK CENTRAL.—Contracts have been let by this road as follows: To the Duffy Construction Corp., New York, for a railway express building at Catherine street and Burnet avenue, Syracuse, N. Y.; P. T. Cox Contracting Company, Inc., New York, for express highway, between West Ninety-fourth and West Ninety-eighth streets, and elimination of grade crossing of West Ninety-sixth street, New York; Walsh Construction Company, Syracuse, N. Y., for work in connection with the elimination of grade crossing of Howard road, between Center Park station and Coldwater station, Rochester, N. Y.; Outpost Nurseries, Inc., Ridgefield, Conn., for landscaping work for Riverside Drive, New York; George W. Rogers Construction Corp., New York, for repairs to Pier 76, North river, New York.

PENNSYLVANIA.—A contract has been given to the Empire Construction Company, Baltimore, Md., for the construction of a bridge over West Virginia avenue, N. E., Washington, D. C.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—The Board of Public Service of St. Louis, Mo., has rejected all of the bids received on April 24 for the construction of a timber deck on the railroad deck of the municipal bridge across the Mississippi river between St. Louis and East St. Louis, Ill. The estimated cost of the work was about $200,000, but the lowest bid received at the April 24 letting was $322,182, which was about 60 per cent more than the engineer's estimate. Additional bids will be requested at a later date. The work includes the replacing of ties, rails and guard rails on the railroad deck of the bridge and the placing of new ties and timbers on the approaches to the bridge.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Acquisition.*—The Santa Fe Trail Stages, Inc., has applied to the Interstate Commerce Commission for authority to acquire control of the Rio Grande Stages, which operates a bus line between El Paso, Tex., and Albuquerque, N. M., by purchase of its capital stock.

ATLANTIC COAST LINE.—*Annual Report.*—The 1935 annual report of this company shows net deficit, after interest and other charges, of $2,529,455, as compared with net deficit of $495,478 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or decrease
RAILWAY OPERATING REVENUES	$39,042,245	$39,533,827	−$491,581
Maintenance of way	4,677,568	4,893,109	−215,540
Maintenance of equipment	8,233,649	7,871,133	+362,515
Transportation	15,751,475	14,879,799	+871,675
TOTAL OPERATING EXPENSES	32,063,674	30,897,534	+1,166,139
Operating ratio	82.13	78.15	+3.98
NET REVENUE FROM OPERATIONS	6,978,571	8,636,292	−1,657,721
Railway tax accruals	3,630,000	3,555,000	+75,000
Railway operating income	3,339,207	5,068,414	−1,929,207
Equipment rents—Net Dr.	775,260	795,345	−20,084
Joint facility rents—Net Cr.	14,815	16,487	−1,671
NET RAILWAY OPERATING INCOME	2,578,762	4,289,556	−1,710,794
Non-operating income	2,444,993	2,786,888	−341,895
GROSS INCOME	5,023,755	7,076,445	−2,052,689
Interest and rentals	6,588,987	6,548,246	+40,740
NET DEFICIT	$2,529,455	$495,478	+$2,033,977

BOSTON & MAINE.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon three branch lines, from Ashburnham to South Ashburnham, Mass., 2.5 miles, from Garrison station to Merrimack, N. H., 37 miles, and from Franklin to Bristol, N. H., 13 miles.

BOSTON & MAINE.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue nominally $3,600,000 of first mortgage 5 per cent series MM bonds to reimburse its treasury for retiring matured bonds.

BELT RAILWAY OF CHICAGO.—*Annual Report.*—The 1935 annual report of this company shows net income, after interest and other charges, of $181,625, as compared with net income of $298,648 in 1934. Selected items from the Income Statement follow:

	1935	1934	Increase or decrease
RAILWAY OPERATING REVENUES	$4,654,487	$4,565,384	+$89,103
Maintenance of way	305,148	297,275	+7,873
Maintenance of equipment	363,858	400,403	−36,544
Transportation	1,985,940	1,851,730	+134,210
TOTAL OPERATING EXPENSES	2,767,365	2,719,878	+47,487
Operating ratio	59.46	59.58	−0.12
NET REVENUE FROM OPERATIONS	1,887,121	1,845,505	+41,616
Railway tax accruals	460,408	355,392	+105,016
Railway operating income	1,426,713	1,490,015	−63,301
Net rents	350,295	450,443	−100,148
NET RAILWAY OPERATING INCOME	1,777,008	1,940,458	−163,449
Non-operating income	127,486	127,220	+266
GROSS INCOME	1,904,495	2,067,678	−163,183
Rent for leased roads	1,714,908	1,765,176	−50,268
Interest on funded debt	68	1,981	−1,912
TOTAL FIXED CHARGES	1,715,085	1,767,772	−52,686
NET INCOME	$181,625	$298,648	−$117,023

CANADIAN PACIFIC.—*Pays Dominion-guaranteed Loan.*—This company last week paid the balance of principal and interest due on a bank loan of $60,000,000 which it contracted in 1933 and which was guaranteed by the Dominion government.

Annual Meeting.—At the annual meeting of the shareholders this week in Montreal, Chairman Sir Edward Beatty held out the resumption of dividends on preferred stock as an early prospect. Gross revenues were up 10.8 per cent for the first quarter this year over the same period in 1935, and net operating revenues showed an increase of 34.5 per cent. Shareholders authorized an increase of $65,000,000 in capital stock (shares $25 par).

CHESAPEAKE & OHIO.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $40,362,000 of refunding and improvement mortgage 3½ per cent series D bonds, to be sold to Morgan, Stanley & Co., Inc., at 97.5, making the cost to the railroad approximately 3.6 per cent. The issue will mature in 1996 and is provided with a sinking fund. It has been offered to the public at 99½. The proceeds of the issue will be used to refund $35,088,000 of series B and $5,274,000 of series B 4½ per cent bonds.

CHICAGO & WESTERN INDIANA.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $24,462,000 of first and refunding sinking fund 4½ per cent bonds for the purpose of refunding 5½ per cent bonds.

CHICAGO, ROCK ISLAND & PACIFIC.—*Reorganization Plan.*—The Federal District Court at Chicago, on May 5, instructed officers of the Rock Island to present a reorganization plan by June 1. Counsel for the road promised that a plan would be filed with both the court and the Interstate Commerce Commission on that date. Federal Judge James H. Wilkerson also continued until June 16 the plea for dissolution of the injunction secured by the road restraining the Reconstruction Finance Corporation from selling $40,000,000 worth of collateral which the line deposited with it against a loan of $14,000,000. The court also took under advisement the plea of Attorney Otis E. Glenn, acting for the trustees, who asked permission to sell $4,-

500,000 in trustees' certificates for maintenance of the lines.

CINCINNATI UNION TERMINAL.—*Bonds.*—Morgan, Stanley & Co. and Kuhn, Loeb & Co. have offered, subject to the approval of the Interstate Commerce Commission, $24,000,000 of first mortgage, series D 3½ per cent bonds of this company, due 1971, priced at 102½. The issue will be provided with a sinking fund, and the proceeds will be used to redeem on July 1 outstanding issues of 4½ per cent and 5½ per cent bonds. The issue will be guaranteed by the Baltimore & Ohio, the Chesapeake & Ohio, the Cincinnati, New Orleans & Texas Pacific, the Big Four, the Louisville & Nashville, the Norfolk & Western and the Pennsylvania.

DULUTH, MISSABE & NORTHERN.—*Annual Report.*—The 1935 annual report of this company shows net income, after interest and other charges, of $2,600,907, as compared with net income of $1,346,452 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or Decrease
RAILWAY OPERATING REVENUES	$11,519,810	$9,486,592	+$2,033,217
Maintenance of way	1,494,378	1,465,147	+29,230
Maintenance of equipment	2,186,850	2,468,872	−282,021
Transportation	2,467,841	2,219,868	+247,972
TOTAL OPERATING EXPENSES	6,642,542	6,717,413	−74,870
Operating ratio	57.66	70.81	−13.15
NET REVENUE FROM OPERATIONS	4,877,267	2,769,179	+2,108,088
Railway tax accruals	1,121,436	810,238	+311,198
Railway operating income	3,755,614	1,958,535	+1,797,079
Equipment and joint facility rents—Net Cr.	9,972	23,113	−13,140
NET RAILWAY OPERATING INCOME	3,765,586	1,981,648	+1,783,938
Other income	344,913	902,058	−557,145
GROSS INCOME	4,110,499	2,883,706	+1,226,792
Rent for leased roads	1,441,573	1,428,600	+12,973
Interest on funded debt	52,675	94,697	−42,022
TOTAL FIXED CHARGES	1,494,460	1,523,437	−28,976
NET INCOME	$2,600,907	$1,346,452	+$1,254,455

FLORIDA EAST COAST.—*R.F.C. Loan.*—The Interstate Commerce Commission has authorized extension for two years of a loan of $627,075 from the Reconstruction Finance Corporation to the receivers of this company which matured May 1.

ILLINOIS CENTRAL.—*Annual Report.*—The 1935 report of the Illinois Central System shows net deficit, after interest and other charges, of $9,932,399, as compared with net deficit of $2,964,646 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or Decrease
Average Mileage Operated	6,603.33	6,626.53	−23.20
RAILWAY OPERATING REVENUES	$97,496,696	$91,144,973	+$6,351,723
TOTAL OPERATING EXPENSES	81,853,579	67,855,400	+13,998,179*
Operating ratio	83.96	74.45	+9.51
NET REVENUE FROM OPERATIONS	15,643,117	23,289,573	−7,646,456
Railway tax accruals	6,693,086	6,309,518	+383,568
Railway operating income	8,913,073	16,920,436	−8,007,363
Hire of equipment—Dr.	2,955,957	3,578,865	−622,908
NET RAILWAY OPERATING INCOME	6,724,243	13,543,613	−6,819,370
Non-operating income	805,013	951,738	−146,724
GROSS INCOME	7,529,256	14,495,352	−6,966,095
Rent for leased roads	942,670	942,884	−214
Interest on funded debt	16,054,626	16,056,407	−1,781
TOTAL DEDUCTIONS FROM GROSS INCOME	17,461,656	17,459,998	+1,657
NET INCOME (deficit)	*$9,932,399	$2,964,646	+$6,967,753*

* Includes $7,750,205.43 for maintenance expenses in 1934.

LOUISVILLE & NASHVILLE.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a branch line extending from Hematite, Tenn., through Van Leer, to a connection with the N. C. & St. L. at Pond, 31 miles, together with a 6-mile spur line.

LOUISVILLE & NASHVILLE.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority for the conveyance to it of all the property of the Black Mountain, 8.26 miles, and the Cumberland & Manchester, 23.02 miles, which it already controls through stock ownership.

LOUISVILLE & NASHVILLE.—*Annual Report.*—The 1935 annual report of this road shows net income, after interest and other charges, of $4,128,943, as compared with net income of $2,967,384 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or decrease
RAILWAY OPERATING REVENUES	$75,694,730	$69,962,668	+$5,732,062
Maintenance of way	8,238,957	8,273,525	−34,568
Maintenance of equipment	17,214,874	14,668,291	+2,546,583
Transportation	26,660,845	24,649,911	+2,010,934
TOTAL OPERATING EXPENSES	57,795,869	53,330,787	+4,465,081
Operating ratio	76.4	76.2	−0.2
NET REVENUE FROM OPERATIONS	17,898,860	16,631,880	+1,266,980
Railway tax accruals	4,311,108	3,822,906	+488,202
Railway operating income	13,572,341	12,793,456	+778,885
Net rents	389,618	173,841	+215,777
NET RAILWAY OPERATING INCOME	13,961,958	12,967,296	+994,661
Other income	825,123	810,034	+15,089
TOTAL INCOME	14,787,082	13,777,330	+1,009,751
Rent for leased roads	307,134	312,059	−4,925
Interest on funded debt	9,967,532	10,096,849	−129,316
TOTAL FIXED CHARGES	10,315,084	10,450,023	−134,938
NET INCOME	$4,128,943	$2,967,384	+$1,161,558

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*R.F.C. Loan.*—This company has applied to the Reconstruction Finance Corporation for an extension of its loan of $5,000,000 maturing August 1.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—*Annual Report.*—The 1935 annual report of this company shows net deficit, after interest and other charges, of $791,459, as compared with net deficit of $351,939 in 1934. Selected items from the Income Statement follow:

	1935	1934	Increase or decrease
Average Mileage Operated	1,173.71	1,203.39	−29.68
RAILWAY OPERATING REVENUES	$12,303,491	$12,733,701	−$430,210
Maintenance of way	1,639,943	1,664,933	−24,990
Maintenance of equipment	2,927,649	2,958,769	−31,120
Transportation	5,113,813	5,030,588	+82,225
TOTAL OPERATING EXPENSES	11,120,990	11,048,704	+72,286
Operating ratio	90.39	86.77	+3.62
NET REVENUE FROM OPERATIONS	1,182,501	1,684,996	−502,495
Railway tax accruals	455,152	437,290	+17,862
Railway operating income	725,317	1,245,085	−519,768
Equipment rents—Dr.	369,209	435,892	−66,683
Joint facility rents	166,902	144,350	+22,552
NET RAILWAY OPERATING INCOME	523,010	953,543	−430,533
Non-operating income	232,294	243,692	−11,398
GROSS INCOME	755,305	1,197,236	−441,931
Rent for leased roads	806,506	806,506	.....
Interest on funded debt	687,066	697,656	−10,590
TOTAL DEDUCTIONS FROM GROSS INCOME	1,546,765	1,549,175	−2,410
NET INCOME (deficit)	$791,459	$351,939	+$439,520

NORTHERN PACIFIC.—*Annual Report.*—The 1935 annual report of this company shows net income, after interest and other charges, of $431,782, as compared with net income of $899,405 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or decrease
Average Mileage Operated	6,725.07	6,724.96	+.11
RAILWAY OPERATING REVENUES	$53,845,653	$51,407,775	+$2,437,878
Maintenance of way	6,181,163	5,494,005	+687,158
Maintenance of equipment	11,991,446	10,686,931	+1,304,514
Transportation	20,532,072	19,386,074	+1,145,998
TOTAL OPERATING EXPENSES	44,093,599	41,550,813	+2,542,786
NET REVENUE FROM OPERATIONS	9,752,053	9,856,961	−104,907
Railway tax accruals	5,286,070	5,312,592	−26,522
Railway operating income	4,450,367	4,527,794	−77,426
Equipment rents—Net Cr.	767,600	842,055	−74,455
Joint facility rents—Net Cr.	2,508,373	2,545,358	−36,985

Net Railway Operating Income	7,726,341	7,915,208	−188,867
Non-operating income	7,233,302	7,537,547	−304,245
Gross Income	14,959,644	15,452,756	−493,112
Rent for leased roads	51,255	51,418	−163
Interest on funded debt	14,231,311	14,230,453	+858
Total Deductions from Gross Income	14,290,933	14,300,982	+10,048
Net Income	$431,782	$899,405	−$467,623

Pennsylvania. — *Redemption.* — This company on May 1 redeemed $50,000,000 of 5 per cent secured bonds due 1964. The issue was replaced by $40,000,000 of 3¾ per cent bonds, the balance being paid out of the company's treasury.

Southern.—*Abandonment.* — The Interstate Commerce Commisssion has authorized the abandonment of a branch line between Sumpter Junction, S. C., and Sumpter, 15.8 miles, provided that an interchange connection betweeen this railway and the A. C. L. be installed at Foxville, S. C.

Union Pacific.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $26,835,000 of 3½ per cent 35-year debenture bonds, to be provided with a sinking fund and sold to Kuhn, Loeb & Co. at 97, making the cost to the railroad 3.652 per cent. The proceeds will be used to redeem at 102½ an equivalent amount of 4½ per cent bonds. The transaction will save the company $268,350 annually in interest, without deducting the premium on the bonds redeemed or the discount on the new issue.

Union Pacific. — *Abandonment.* — The Interstate Commerce Commission has authorized this company and the Los Angeles & Salt Lake to abandon a part of a branch line from a point near Overton, Nev., to St. Thomas, 4.5 miles; reason, flooding of the area by waters impounded by the Boulder dam.

Union Pacific. — *Acquisition.* — This company and the Oregon Short Line have applied to the Interstate Commerce Commission for authority to acquire the Pacific & Idaho Northern, which has a line of 90 miles from Weiser, Idaho, to Meadows, in accordance with a condition attached by the commission to its authorization of the lease by the Union Pacific of four subsidiaries. An agreement has been reached by which the Union Pacific or the O. S. L. will bid $62,000 for the property at a foreclosure sale.

Western Maryland.—*Annual Report.*—The 1935 annual report of this company shows net income, after interest and other charges, of $1,002,657, as compared with net income of $995,255 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or Decrease
Average Mileage Operated	883.07	888.85	−4.78
Railway Operating Revenues	$14,791,402	$13,883,274	+$908,128
Maintenance of way	1,979,202	1,863,418	+115,783
Maintenance of equipment	3,433,021	3,026,056	+406,965
Transportation	3,734,934	3,589,708	+145,225
Total Operating Expenses	10,205,418	9,444,083	+761,335
Operating ratio	69.00	68.02	+.98
Net Revenue from Operations	4,585,984	4,439,191	+146,792
Railway tax accruals	78,664	717,716	+67,947
Railway operating income	3,799,771	3,720,519	+79,252
Hire of equipment—Net	374,706	377,295	−2,589
Other income	82,098	127,948	−44,950
Gross Income	4,289,775	4,233,226	−43,451
Rent for leased roads	52,568	55,188	−2,619
Interest on funded debt	2,703,390	2,704,303	−913
Total Deductions from Gross Income	3,187,117	3,237,971	−50,853
Net Income	$1,002,657	$995,255	+$7,401

Wheeling & Lake Erie.—*Annual Report.*—The 1935 annual report of this company shows net income, after interest and other charges, of $2,162,113, as compared with net income of $1,197,548 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or decrease
Average Mileage Operated	511.60	511.60	.....
Railway Operating Revenues	$13,497,874	$11,239,793	+$2,258,081
Maintenance of way	1,788,198	1,070,410	+717,788
Maintenance of equipment	3,484,189	3,270,917	+213,272
Transportation	3,925,694	3,411,509	+514,185
Total Operating Expenses	9,901,688	8,504,959	+1,396,729
Operating ratio	73.36	75.67	−2.31
Net Revenue from Operations	3,596,186	2,734,833	+861,353
Railway tax accruals	976,416	823,136	+153,280
Railway operating income	2,619,346	1,909,464	+709,882
Equipment and joint facility rents	Cr.51,227	Dr.144,635	+195,862
Net Railway Operating Income	2,670,573	1,764,828	+905,745
Non-operating income	147,842	139,616	+8,226
Gross Income	2,818,416	1,904,445	+913,971
Interest on funded debt	637,300	684,727	−47,427
Total Fixed Charges	643,417	692,559	−49,142
Net Income	$2,162,113	$1,197,548	+$964,565

Yale Short Line.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its entire line from Casey to Yale, Ill., 12 miles.

Dividends Declared

Dayton & Michigan.—8 Per Cent Preferred, $1.00, quarterly, payable July 7 to holders of record June 15.

Norfolk & Western.—$2.00, quarterly, payable June 19 to holders of record May 29.

Average Prices of Stocks and of Bonds

	May 5	Last week	Last year
Average price of 20 representative railway stocks..	44.97	44.46	30.73
Average price of 20 representative railway bonds..	78.52	78.56	72.79

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

William H. Curle, general counsel of the Canadian Pacific, with headquarters at Montreal, Que., has retired under the company's pension rules. **E. P. Flintoft,** general solicitor, has been appointed general counsel, succeeding Mr. Curle. **G. A. Walker,** assistant general solicitor, has been appointed general solicitor, succeeding Mr. Flintoft. Mr. Curle was born in Illinois in 1870 and was graduated from Queen's University, Kingston, Ont., in 1889 and from Osgoode Hall in 1895. He entered the service of the Canadian Pacific in 1908 as assistant solicitor in the Law department at Winnipeg, Man., and became solicitor in 1910. Two years later he resigned in order to practice law in Winnipeg, rejoining the C. P. R. in 1917 as general solicitor in the Law department at Montreal. Mr. Curle became general counsel for the company in 1929, which position he held until his retirement on May 1.

William H. Curle

E. P. Flintoft

Mr. Flintoft was born at Sarnia, Ont., in October, 1879, and was graduated from the University of Toronto and from law school at Toronto. He entered the service

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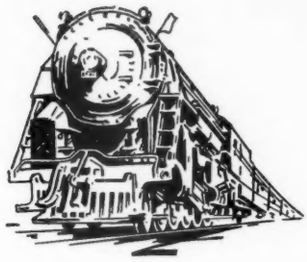

*THE RECORD SHOWS . . .

• • • • the following improvements in freight train operations due to better management, methods and equipment:

"An important factor in the improved railway service is the increase in the average speed of freight trains. For example, miles per freight train hour averaged 10.3 miles in 1920, 11.1 miles in 1922 and 15.9 miles in 1934, an increase in 1934 over 1920 of 54.4%. These averages represent the running time between divisions and terminals, including delays encountered while en route.

"As another example, gross ton-miles per freight train hour averaged 14,877 in 1920, 16,188 in 1922 and 28,041 in 1934, an increace in 1934 over 1920 of 88.5%.

"The record shows many freight trains are being operated with the regularity and dependability of passenger trains, and in many cases almost as fast.

'The record shows that the average cost per 1,000 revenue ton-miles of freight traffic has been reduced from $10.66 in 1920 to $6.48 in 1933."

Modern Locomotives made this record possible.

* L. W. Wallace, Director of Equipment Research; Association of American Railroads, before the Pittsburgh Railway Club.

LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO

LIMA LOCOMOTIVE WORKS INCORPORATED

of the Canadian Pacific in November, 1908, as assistant to the solicitor. He remained in that position until January, 1912, at which time he was promoted to assistant solicitor. In August, 1914, **Mr. Flintoft** was appointed solicitor and in March, 1917, he was promoted to the position of assistant general solicitor at Montreal. He

George A. Walker

became general solicitor in March, 1929, the position he held until his recent appointment as general counsel.

Mr. Walker entered the service of the Canadian Pacific as office boy in the solicitor's office in Toronto. He progressed to the position of chief clerk, which he attained in 1901. He studied law and in 1906 became associated with the Law department at Toronto, becoming solicitor at Calgary, Alta., in 1911. Mr. Walker was appointed acting manager of the Department of Natural Resources at Calgary in 1918, returning to the law department as solicitor in 1919. He became assistant general solicitor at Montreal in November, 1934.

Byran B. Rankin, whose appointment as general auditor of the Pittsburgh & Lake Erie, with headquarters at Pittsburgh, Pa., was noted in the *Railway Age* of May 2, was born on January 18, 1880, at Pittsburgh. Mr. Rankin entered railroad service on October 7, 1895, as messenger in the car department of the Pittsburgh & Lake Erie. On January 1, 1897, he became shipping clerk in the car department, serving in the locomotive department from April, 1899, to September, 1908, successively as bill clerk, stores clerk, and timekeeper. On September 1, 1908, Mr. Rankin became shop accountant and on November 1, 1918, assistant auditor disbursements. He was appointed auditor disbursements on September 1, 1919, and assistant auditor on January 17, 1921. Mr. Rankin was appointed assistant general auditor on June 1, 1924, the position he held until his recent appointment as general auditor.

TRAFFIC

S. T. Stackpole, assistant vice-president of the Pennsylvania at Detroit, Mich., has been appointed to the newly-created position of freight traffic manager, with the same headquarters. Mr. Stackpole will have jurisdiction over traffic matters in the entire Detroit area and will continue as the company's ranking representative in that city.

Harvey W. Wike, local freight agent at Minneapolis, Minn., for the Northern Pacific, has been appointed assistant general freight agent, with the same headquarters, succeeding **W. H. Smith,** deceased.

OPERATING

John M. Budd, trainmaster on the Willmar division of the Great Northern, with headquarters at Sioux City, Iowa, has been transferred to the Spokane division, with headquarters at Wenatchee, Wash., succeeding **C. T. Kenney,** who has been transferred to the Willmar division, with headquarters at Minneapolis, Minn.

W. R. Triem, division superintendent of the Pennsylvania, with headquarters at Pittsburgh, Pa., has been appointed general superintendent of telegraph at Philadelphia, Pa. **J. F. Gillum,** division engineer, Pittsburgh division, has been promoted to superintendent of the Monongahela division, with headquarters at Pittsburgh, succeeding Mr. Triem.

E. C. Gegenheimer, superintendent of the Williamsport division of the Pennsylvania, with headquarters at Williamsport, Pa., has been appointed superintendent of the Middle division at Altoona, Pa., succeeding **J. B. Phelan,** who has been appointed assistant superintendent of car service at Philadelphia. **P. E. Feucht**, superintendent of the Wilkes-Barre division, with headquarters at Sunbury, Pa., has been appointed superintendent of passenger transportation, succeeding **C. G. Grove.** A photograph and a biographical sketch of Mr. Feucht's railway career was published in the *Railway Age* of April 6, 1935.

Collins W. Van Nort, superintendent of freight transportation of the Central Region of the Pennsylvania, with headquarters at Pittsburgh, Pa., has been appointed superintendent of the Wilkes-

C. W. Van Nort

Barre division at Sunbury, Pa., succeeding **P. E. Feucht.** Mr. Van Nort was born at Scranton, Pa., on April 2, 1891, and attended grade and high schools in that city. He was graduated from Lehigh University in 1913 and entered the service of the Pennsylvania on June 15, 1913, as a rodman on the Monongahela division, later serving as a transitman. On September 28, 1917, he became assistant supervisor on the Buffalo division, serving in the same capacity on the New York division, and was promoted to supervisor of the Pittsburgh division on January 18, 1927. Mr. Van Nort was appointed division engineer of the Erie and Ashtabula division on November 12, 1928, being transferred to the Pittsburgh division on December 22, 1930, and appointed superintendent, Erie and Ashtabula division, on July 1, 1933. Mr. Van Nort became superintendent of freight transportation, Central Region, on June 15, 1934.

Charles G. Grove, superintendent of passenger transportation of the Eastern region of the Pennsylvania, with headquarters at Philadelphia, Pa., has been appointed superintendent of the Williamsport division, succeeding **E. C. Gegenheimer.** Mr. Grove was born in York County, Pa., in December, 1890, and was

C. G. Grove

graduated from Pennsylvania State College. He entered the service of the P.R.R. in September, 1912, as a chainman in the chief engineer's department and in the following year was transferred to the maintenance of way department, serving as a rodman, assistant supervisor and supervisor on various operating divisions. In November, 1928, he was appointed division engineer of the St. Louis division at Terre Haute, Ind., and three years later he became division engineer of the Panhandle division at Pittsburgh, Pa. He was advanced to superintendent and assigned to the Wilkes-Barre division in July, 1933. Mr. Grove became superintendent of passenger transportation of the Eastern region in October, 1934.

Wade E. Haist, whose appointment as superintendent of the Galesburg and Beardstown divisions of the Chicago, Burlington & Quincy, with headquarters at Galesburg, Ill., was noted in the *Railway Age* of May 2, has been connected with this company continuously for about 21 years. He was born on November 19, 1886, at Table Grove, Ill., and entered the service of the Burlington in 1915, serving as an agent and operator at Ottumwa, Iowa, until 1916, when he was appointed

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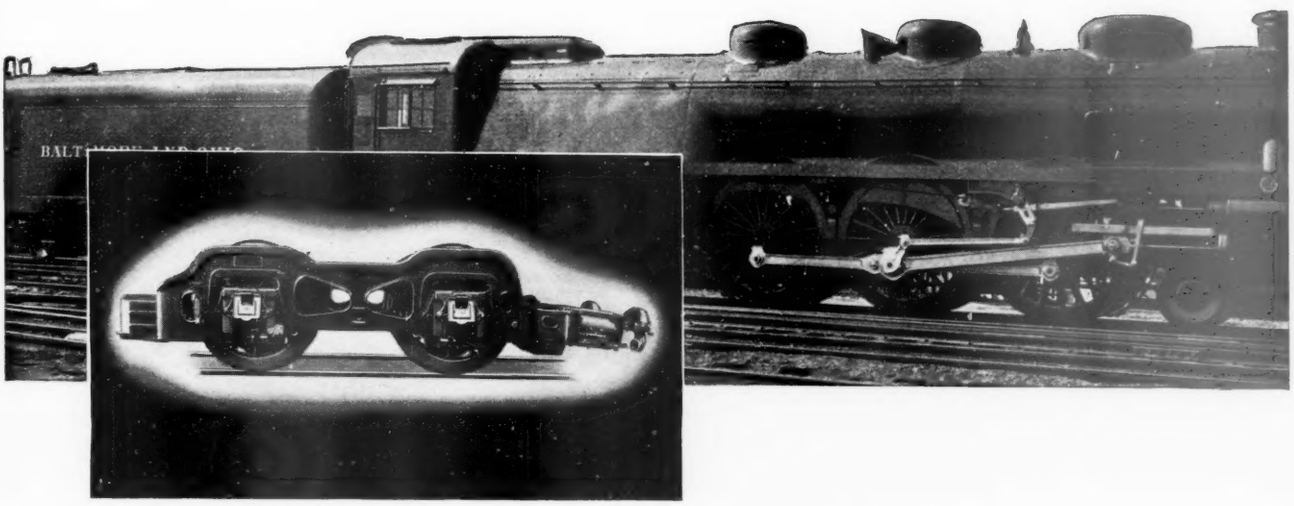

Locomotives designed to provide correct equality of power between the maximum operating speed and the speed employed in the starting range results in maximum economy of both maintenance and fuel.

This balance of power requires that the main cylinders be proportioned to provide power for road speeds and the added power of The Locomotive Booster be used for starting and accelerating.

It is applicable to any motive power unit and yields very economical operation regardless of locomotive size or service.

The Booster is the only device that adds to drawbar pull. It conserves capital, reduces weight, saves maintenance and is the quickest means of cutting the cost of transportation. It should be an integral part of the design of every new locomotive and added to all existing engines suitable for its application.

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FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

freight service inspector. Two years later Mr. Haist was further advanced to yardmaster at Ottumwa, later serving in this position at Burlington, Iowa. In 1918 he was promoted to trainmaster at Burlington and was later transferred to Ottumwa.

Wade E. Haist

In 1927 he was made assistant to the general manager at Omaha, Neb., and in the following year he was sent to Chicago, where he was attached to the staff of the general manager. His next appointment came in 1929, when he was appointed superintendent at Beardstown, Ill., being appointed assistant superintendent at the same point in 1931. Since July, 1932, Mr. Haist has served as assistant to the general manager at Chicago.

Louis C. Fritch, whose retirement as operating officer of the Chicago, Rock

Louis C. Fritch

Island & Pacific was announced in the *Railway Age* of May 2, has served with various railroads in executive capacities for about 44 years. A native of Springfield, Ill., Mr. Fritch was born in 1869. He received his higher education at the University of Cincinnati, where he graduated with degrees in civil engineering and in law, being admitted to the bar in Ohio in 1899. Mr. Fritch entered railway service in 1884 with the Ohio & Mississippi (now part of the Baltimore & Ohio) as supervisor's assistant. On November 1, 1893, he was appointed division engineer of the Baltimore & Ohio Southwestern (now part of the B. & O.), which had absorbed the Ohio & Mississippi, and in September, 1899, he became superintendent of the Mississippi division. Mr. Fritch went with the Illinois Central in 1903 as assistant to the general manager, being appointed assistant to the president in 1906 and consulting engineer in 1909. In November of the latter year he left the Illinois Central to go with the Chicago Great Western as chief engineer, remaining in that capacity until 1914, when he went with the Canadian Northern (now part of the Canadian National) as assistant to the president. In August, 1915, he was made general manager of the lines east of Port Arthur, Ont., holding this position until the spring of 1917, when he accepted a position with the Seaboard Air Line as general manager. In June, 1918, Mr. Fritch severed his connection with the Seaboard Air Line and shortly thereafter became connected with the Rock Island as vice-president of corporate matters. In 1920 he was made vice-president of construction and maintenance and in 1922 he was further advanced to vice-president in charge of operations. In 1933, when trustees were appointed for the Rock Island, Mr. Fritch's title was changed to operating officer. Mr. Fritch was one of the founders of the American Railway Engineering Association and served as its first secretary (1900-06). He is also a past-president of the A.R.E.A. (1910-11) and is an honorary member of this association.

J. D. Farrington, general manager of the Ft. Worth & Denver City and the Wichita Valley, whose appointment as chief operating officer of the Chicago, Rock Island & Pacific was announced in the *Railway Age* of May 2, has been in railway service for more than 25 years. He was born on January 27, 1891, at St. Paul, Minn., and, after a high school education, he entered railway service with the Great Northern in June, 1909, in the engineering department. In 1910 he went with the Chicago, Burlington & Quincy as a timekeeper, then serving successively as assistant foreman, foreman and roadmaster in the track department. Later he was transferred to the operating department, where he served successively as assistant trainmaster, trainmaster and assistant superintendent. From 1917 to 1919, Mr. Far-

J. D. Farrington

rington served with the United States Army as lieutenant, captain and major. Following the war he returned to railroad service as superintendent of the Quincy, Omaha & Kansas City (part of the Burlington), being appointed superintendent of the St. Joseph division of the Burlington on December 1, 1922. In the following year he was transferred to the Aurora division and on January 1, 1930, he was advanced to general superintendent of the Missouri district, being transferred to Burlington, Iowa, on May 1, 1931. Since October 1, 1931, Mr. Farrington has been general manager of the Ft. Worth & Denver City and the Wichita Valley, with headquarters at Ft. Worth, Texas. His appointment as chief operating officer of the Rock Island becomes effective May 15.

Charles D. Peckenpaugh, who has been appointed general manager of the Ft. Worth & Denver City and the Wichita Valley (subsidiaries of the Chicago, Burlington & Quincy), with headquarters at Ft. Worth, Tex., was born on February 28, 1878, at Logan, Iowa. He entered the service of the Burlington in 1889 as an operator on the McCook division. From

Charles D. Peckenpaugh

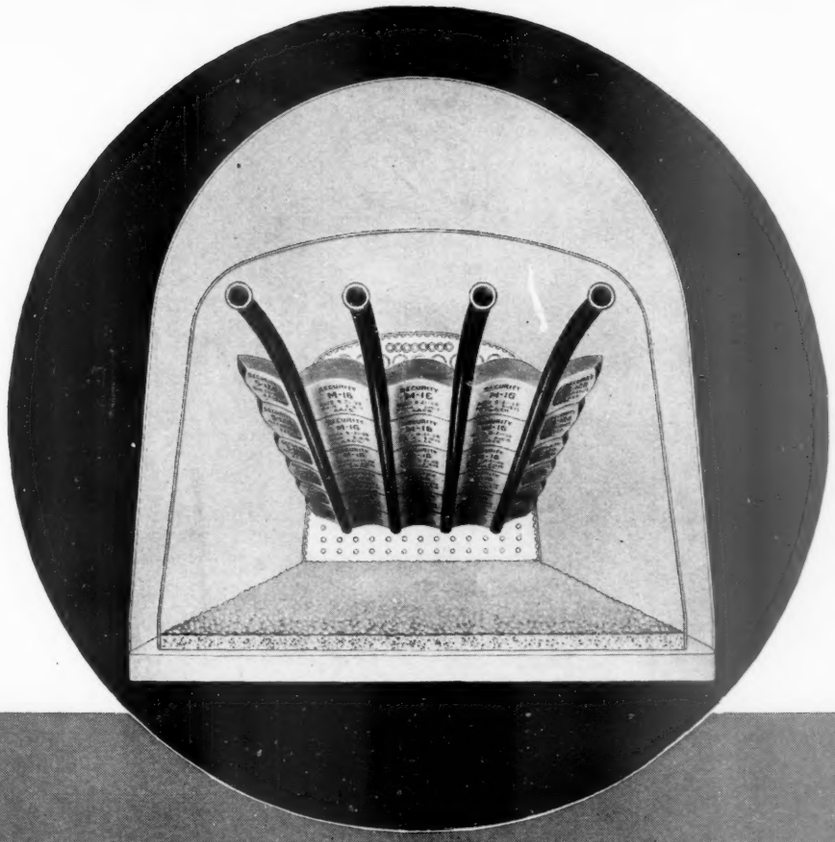
1895 to 1905, he served as an operator, agent and despatcher at Alliance, Neb. In the latter year he was advanced to chief despatcher at Sterling, Colo., being transferred to Sheridan, Wyo., in 1909. Later in the same year he was appointed trainmaster, with the same headquarters, and in the following year he was advanced to superintendent, serving successively in this position at Sterling, Sheridan, McCook, Neb., and Aurora, Ill. In 1923 he was advanced to general superintendent of the Missouri district, with headquarters at St. Louis, Mo., and in 1930 he was transferred to the Illinois district at Galesburg, Ill., where he was located at the time of his recent appointment as general manager of the F. W. & D. C.

ENGINEERING AND SIGNALING

Alfred E. Perlman, assistant engineer maintenance of way of the Chicago, Burlington & Quincy, with headquarters at Chicago, has been appointed to the newly-created position of engineer maintenance of way of the Denver & Rio Grande Western, with headquarters at Denver, Colo. Mr. Perlman was born on November 22, 1902, at St. Paul, Minn., and was

(*Continued on page 788*)

***Tables of Revenues and Expenses of Railways** begin on next left-hand page*



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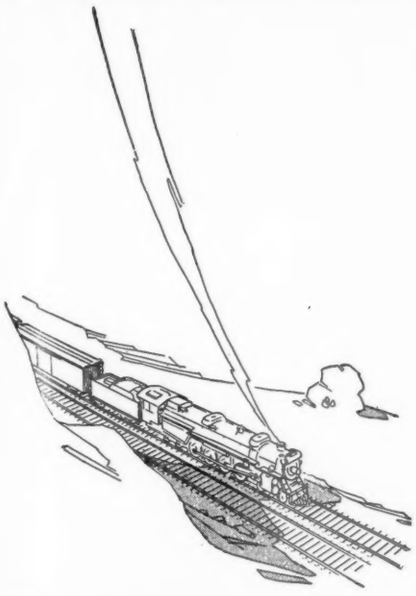

To make Arch Brick for a modern locomotive is an intricate and complicated job. » » » The clays must be exactly proportioned, grinding and moulding must be done by experts. » » » Burning is an art in itself for this brick must stand up. » » » It is this care in every step of manufacture that makes Security Arch Brick deliver maximum mileage in locomotive service—the severest service in the world.

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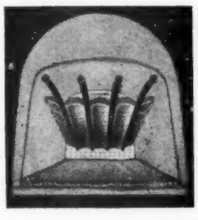

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Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1936

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: After depr. & retir. 1936	1935	Before depr. & ret.
Akron, Canton & Youngstown	March	171	$161,400	$60	$179,011	$27,445	$16,436	$7,807	$50,948	$111,833	62.5	$67,178	$54,333	$34,442	$35,136	$38,913
	3 mos.	171	507,461	164	547,741	79,462	48,709	23,939	157,011	336,742	61.5	210,999	177,945	123,283	131,291	136,715
Alton	March	956	904,883	144,765	1,217,561	135,505	243,712	44,752	498,866	985,681	81.0	231,880	139,667	—35,702	30,305	—8,481
	3 mos.	956	2,701,341	507,015	3,712,686	382,174	695,840	134,217	1,548,048	2,952,756	79.5	759,930	513,304	10,746	17,476	92,403
Atchison, Topeka & Santa Fe Sys.	March	13,234	9,733,191	1,084,245	11,857,317	1,906,417	2,895,658	416,330	4,313,812	9,964,443	84.0	1,892,874	732,131	681,338	623,275	1,626,977
	3 mos.	13,234	26,553,527	3,454,143	32,963,966	4,734,884	8,444,376	1,219,781	12,727,109	28,487,515	86.4	4,476,451	1,469,438	1,354,883	366,931	4,190,256
Atlanta & West Point	March	93	99,634	22,519	145,404	19,180	29,747	8,423	60,774	127,141	87.4	18,263	11,060	—2,754	—3,946	8,316
	3 mos.	93	286,850	67,114	419,589	56,903	83,521	24,109	179,800	372,701	88.8	46,888	25,302	—10,859	—24,588	22,604
Western of Alabama	March	133	93,417	22,165	131,014	21,303	32,212	7,147	53,533	121,839	93.0	9,175	452	3,833	—6,053	.....
	3 mos.	133	256,227	68,915	369,787	62,393	93,211	21,218	155,848	357,000	96.5	12,787	—13,310	—1,672	—31,534	.....
Atlanta, Birmingham & Coast	March	639	244,936	32,030	312,094	40,559	50,323	21,973	117,853	258,700	82.9	53,394	33,910	8,293	9,354	19,934
	3 mos.	639	663,190	88,536	845,608	127,075	149,409	65,528	334,201	750,532	88.8	95,076	47,559	—8,885	—57,096	28,151
Atlantic Coast Line	March	5,145	3,120,562	1,026,911	4,703,690	404,355	706,567	129,291	1,619,969	3,071,531	65.3	1,632,159	1,007,159	895,000	776,133	1,073,136
	3 mos.	5,145	8,302,786	2,778,352	12,563,925	1,270,211	2,103,487	415,878	4,724,047	9,134,613	72.7	3,429,312	1,954,312	1,583,824	1,398,209	2,121,928
Charleston & Western Carolina	March	342	201,387	975	207,394	28,457	28,542	6,359	64,649	132,876	64.1	74,518	56,518	54,137	61,533	60,441
	3 mos.	342	529,813	3,285	547,526	78,054	80,526	19,038	183,295	375,080	68.5	172,446	119,446	112,044	110,133	130,956
Baltimore & Ohio	March	6,439	10,404,133	702,262	11,870,650	1,263,691	3,292,119	373,380	4,687,262	10,285,901	86.7	1,584,749	684,567	349,330	2,713,108	964,921
	3 mos.	6,439	32,652,276	2,404,639	37,273,405	2,984,509	9,287,212	1,081,089	14,125,562	29,466,019	79.1	7,807,386	5,533,449	4,526,928	6,296,498	6,379,671
Staten Island Rapid Transit	March	23	48,601	78,165	133,698	8,472	21,012	1,596	86,600	129,941	97.2	3,757	—15,493	—31,122	—39,997	—23,705
	3 mos.	23	152,086	228,373	399,984	38,841	63,195	4,971	268,313	412,835	103.2	—12,851	—70,601	—120,435	—151,778	—98,199
Bangor & Aroostook	March	603	640,924	24,242	688,542	94,906	95,150	3,701	167,473	384,447	55.8	304,095	220,614	198,356	225,181	220,442
	3 mos.	603	1,888,855	78,455	2,028,681	304,805	278,832	13,983	508,921	1,175,990	58.0	852,691	649,814	593,356	793,890	659,666
Bessemer & Lake Erie	March	225	528,074	5,345	545,728	119,784	290,224	11,313	146,055	606,181	111.1	—60,453	—108,572	—37,588	58,222	16,378
	3 mos.	225	1,486,925	8,440	1,530,952	224,770	833,049	33,073	435,072	1,641,682	107.2	—110,730	—200,487	—2,462	—67,098	159,702
Boston & Maine	March	1,997	2,382,030	481,095	3,325,221	905,154	665,627	60,846	1,596,508	3,413,645	102.7	—88,424	—391,750	—594,307	502,998	—457,280
	3 mos.	1,997	7,600,386	1,684,545	10,693,588	2,019,356	2,059,385	180,049	4,821,939	9,644,755	90.2	1,048,833	302,399	—309,575	1,048,274	101,505
Brooklyn Eastern District Terminal	March	10.91	112,215	.....	114,650	3,604	7,618	238	30,175	48,300	42.1	66,350	56,513	56,513	29,675	.....
	3 mos.	10.91	294,529	.....	301,336	11,456	20,451	860	87,859	138,684	46.0	102,652	135,056	135,930	108,233	.....
Burlington, Rock Island	March	255	60,342	4,559	70,408	15,383	14,132	3,692	36,467	76,859	109.2	—6,451	—13,831	—23,801	—39,748	—21,482
	3 mos.	255	173,435	13,015	201,272	41,551	40,487	11,841	113,779	229,871	114.2	—28,599	—48,719	—77,539	—87,624	—70,582
Cambria & Indiana	March	37	88,323	.....	88,485	6,799	38,244	378	11,489	62,323	70.43	26,162	5,733	78,688	109,522	94,499
	3 mos.	37	330,783	.....	331,261	18,250	112,612	1,092	42,816	191,312	57.75	139,949	66,759	277,852	293,694	325,484
Canadian Pacific Lines in Maine	March	233	247,057	13,817	272,570	34,030	55,209	9,460	95,057	202,001	74.1	70,569	60,334	36,457	22,253	38,525
	3 mos.	233	706,506	41,115	780,677	100,654	168,845	29,172	298,443	619,784	79.4	160,893	135,215	65,820	46,552	71,966
Canadian Pacific Lines in Vermont	March	85	55,916	3,574	69,656	24,371	25,642	4,205	57,069	117,601	168.8	—47,945	—55,450	.....	.....	—73,296
	3 mos.	85	177,768	22,485	230,197	60,099	76,258	13,037	179,895	346,331	150.4	—116,134	—134,823	.....	.....	—190,325
Central of Georgia	March	1,926	1,138,804	116,541	1,427,827	156,935	272,239	50,516	557,249	1,122,618	78.6	305,209	200,208	153,503	84,116	217,644
	3 mos.	1,926	2,990,931	361,305	3,807,394	476,015	816,968	154,257	1,615,526	3,313,737	87.0	493,657	227,168	123,733	83,552	316,306
Central of New Jersey	March	681	1,789,557	332,292	2,294,144	173,548	573,965	41,772	1,083,144	1,987,136	86.6	307,008	—37,395	—225,516	187,803	—96,374
	3 mos.	681	6,270,612	1,004,434	7,732,388	595,740	1,529,771	127,627	3,384,996	5,977,106	77.3	1,755,282	790,893	317,527	476,557	701,583
Central Vermont	March	455	316,877	19,235	368,546	84,658	97,351	13,933	236,809	454,906	123.4	—86,360	—109,067	—113,292	179	—84,798
	3 mos.	455	1,068,220	95,070	1,271,730	204,018	271,995	42,892	690,520	1,279,027	100.6	—7,297	—58,337	—49,857	—35,608	35,260
Chesapeake & Ohio	March	3,106	9,026,390	230,760	9,607,898	1,033,895	1,907,716	195,387	2,276,263	5,739,821	59.7	3,868,077	2,896,822	3,129,382	3,681,402	3,836,076
	3 mos.	3,106	29,712,229	705,342	31,307,848	3,042,254	5,869,906	554,206	7,053,554	17,473,330	55.8	13,834,518	10,929,634	11,609,595	9,231,754	13,721,684
Chicago & Eastern Illinois	March	931	1,095,694	92,984	1,350,010	141,481	245,288	56,204	518,265	1,032,114	76.5	317,896	242,896	108,115	209,349	157,893
	3 mos.	931	3,223,967	319,165	3,986,775	411,439	718,921	166,348	1,565,275	3,051,714	76.6	935,061	710,061	277,509	313,499	427,181
Chicago & Illinois Midland	March	131	266,099	1,502	274,279	21,539	56,385	16,018	74,694	186,300	67.9	87,979	71,568	68,324	81,824	81,981
	3 mos.	131	855,739	4,873	879,836	73,987	174,065	53,760	245,078	598,017	68.0	281,819	237,647	233,346	237,153	274,277
Chicago & North Western	March	8,355	5,548,729	674,674	6,961,441	796,168	1,630,201	142,695	3,002,679	5,910,510	84.9	1,050,931	356,211	49,271	289,006	464,094
	3 mos.	8,355	15,076,601	2,228,007	19,465,284	2,610,638	4,602,788	449,628	9,069,408	17,733,361	91.1	1,731,923	—67,979	—825,914	179,562	428,351
Chicago, Burlington & Quincy	March	9,013	6,447,717	509,840	7,702,639	733,521	1,336,953	218,320	2,806,485	5,457,995	70.9	2,244,544	1,540,485	1,196,207	513,750	1,580,591
	3 mos.	9,017	18,445,140	1,707,385	22,364,265	2,094,020	4,127,512	640,659	8,607,264	16,534,873	73.9	5,829,392	4,001,077	2,992,242	881,051	4,142,140
Chicago Great Western	March	1,512	1,295,211	59,702	1,450,355	212,967	197,120	52,775	586,750	1,102,804	76.0	347,551	269,227	90,876	—51,467	131,866
	3 mos.	1,512	3,388,684	139,633	3,801,237	692,532	618,811	159,076	1,762,591	3,390,132	89.2	411,105	218,248	—315,581	—267,692	—192,615
Chicago, Indianapolis & Louisville	March	572	717,542	47,872	857,161	74,591	207,019	29,749	334,722	681,011	79.4	176,150	131,221	21,149	—1,011	62,760
	3 mos.	572	2,121,264	143,705	2,534,254	210,126	568,208	85,386	1,022,273	1,988,736	78.5	545,518	444,472	138,975	—95,623	264,052

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Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1936—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: After depr. & retir. 1936	After depr. & retir. 1935	Before depr. & ret.
Chicago, Milw., St. Paul & Pacific	March	11,123	$7,448,869	$488,356	$8,712,026	$945,928	$1,664,248	$197,063	$3,400,268	$6,527,975	74.9	$2,184,051	$1,470,051	$941,593	$532,116	$1,390,040
	3 mos.	11,123	20,653,445	1,512,187	24,458,742	2,946,411	4,814,936	585,214	10,441,763	19,673,004	80.4	4,785,738	2,947,738	1,420,655	302,919	2,768,407
Chicago, Rock Island & Pacific	March	7,574	4,911,222	530,095	6,047,513	696,726	1,419,415	188,473	2,657,346	5,350,083	88.5	697,430	195,799	—81,916	—63,947	277,323
	3 mos.	7,574	13,281,294	1,683,130	16,688.076	1,920,425	4,148,407	561,924	7,834,772	15,631,409	93.7	1,056,667	—236,816	—1,024,504	—1,012,213	54,124
Chicago, Rock Island & Gulf	March	626	264,083	24,860	362,884	50,526	27,751	15,804	126,387	250,215	69.0	112,669	88,739	44,488	—34,021	48,673
	3 mos.	626	712,792	82,947	1,015,302	132,537	97,174	47,768	376,953	731,343	72.0	283,959	225,206	86,570	—61,473	98,970
Chicago, St. Paul, Minneap. & Om.	March	1,648	1,184,728	119,440	1,407,538	151,552	252,183	33,760	782,029	1,299,108	92.3	108,430	—4,193	—128,215	—23,964	—78,291
	3 mos.	1,649	3,397,339	353,642	4,035,144	458,168	740,552	100,823	2,310,554	3,846,757	95.3	188,387	—92,304	—402,013	—134,821	—252,179
Clinchfield Railroad	March	309	487,486	3,932	497,195	40,899	120,039	17,515	95,863	289,449	58.2	207,746	162,482	203,246	194,886	246,839
	3 mos.	309	1,589,055	11,942	1,617,724	115,821	323,830	51,609	321,843	859,520	53.1	758,204	633,893	739,402	543,996	870,224
Colorado & Southern	March	1,023	449,461	23,023	527,672	57,485	117,025	11,710	227,216	447,483	84.8	80,189	14,085	1,116	—71,629	32,727
	3 mos.	1,020	1,288,543	75,309	1,527,434	160,304	323,192	36,186	686,828	1,309,004	85.7	218,430	40,540	—6,622	—130,301	88,548
Fort Worth & Denver City	March	902	436,020	32,936	470,426	33,527	83,695	16,346	152,858	322,172	68.5	148,254	113,036	81,852	14,637	99,732
	3 mos.	902	1,276,644	106,765	1,381,375	102,302	257,407	48,672	451,130	965,534	69.9	415,841	323,175	232,731	13,950	286,300
Columbus & Greenville	March	167	84,842	5,906	95,802	17,931	14,977	3,839	34,915	81,372	84.9	14,430	9,119	7,868	—1,203	10,659
	3 mos.	167	220,582	17,118	252,900	49,193	43,319	11,105	103,286	236,917	93.7	15,983	5,833	2,217	—21,288	10,597
Delaware & Hudson	March	831	1,586,298	80,162	1,754,405	271,866	523,427	43,371	728,213	1,700,833	96.9	53,572	—93,173	—45,907	—33,006	46,592
	3 mos.	831	5,504,102	286,307	6,026,206	776,650	1,482,469	132,172	2,424,227	5,228,282	86.8	797,924	440,860	517,272	116,380	798,197
Delaware, Lackawanna & Western	March	994	2,665,390	553,607	3,667,635	315,692	775,722	113,912	1,841,956	3,236,236	88.2	431,399	96,399	89,352	309,239	312,158
	3 mos.	994	8,945,874	1,721,383	11,933,184	906,923	2,394,918	337,222	5,782,810	9,984,824	83.7	1,948,360	944,360	928,497	830,184	1,597,192
Denver & Rio Grande Western	March	2,584	1,587,802	94,144	1,764,995	201,167	571,776	48,326	608,173	1,512,444	85.7	252,551	50,264	28,347	128,475	124,674
	3 mos.	2,584	4,739,541	284,854	5,277,646	445,830	1,591,103	144,760	1,885,613	4,324,961	81.9	952,685	427,369	345,354	368,057	634,617
Denver & Salt Lake	March	232	177,966	8,720	195,156	25,436	76,578	2,157	53,369	167,218	85.7	27,938	7,026	37,304	75,727	42,905
	3 mos.	232	737,150	26,817	788,639	67,689	177,078	6,516	190,269	469,803	59.6	318,836	265,200	360,875	263,395	377,452
Detroit & Mackinac	March	242	38,437	2,412	46,901	7,484	11,189	811	22,025	44,945	95.8	1,956	—1,065	—4,967	—4,219	—2,002
	3 mos.	242	100,082	9,805	125,642	20,677	30,870	2,706	68,596	132,829	105.7	—7,187	—14,696	—23,600	—17,835	—14,706
Detroit & Toledo Shore Line	March	50	353,465	.....	355,344	25,023	27,733	8,124	85,972	154,149	43.4	201,195	162,864	102,059	120,944	107,619
	3 mos.	50	1,163,327	.....	1,168,858	60,628	80,295	23,151	272,859	458,805	39.3	710,053	590,178	395,756	367,830	412,434
Detroit, Toledo & Ironton	March	472	792,025	166	805,721	60,040	92,751	10,532	156,479	346,627	43.0	459,094	375,572	330,761	443,297	352,427
	3 mos.	472	2,208,429	568	2,245,544	165,892	244,604	31,720	464,884	973,090	43.3	1,272,454	1,039,881	912,333	1,252,794	977,509
Duluth, Missabe & Northern	March	559	80,501	3,550	105,929	111,169	216,100	3,229	134,743	509,355	480.8	—403,426	—451,869	—444,116	—369,894	—369,082
	3 mos.	559	240,855	8,346	306,438	319,389	608,637	10,841	413,080	1,487,455	485.4	—1,181,017	—1,309,000	—1,301,628	—1,148,223	—1,076,535
Duluth, Winnipeg & Pacific	March	178	108,090	1,908	112,392	16,542	18,248	1,779	50,953	91,883	81.8	20,509	12,299	—1,603	—4,512	1,541
	3 mos.	178	366,222	6,127	379,894	47,153	59,509	5,214	160,441	284,856	75.0	95,038	72,296	19,307	—20,638	28,803
Elgin, Joliet & Eastern	March	434	1,376,000	.....	1,534,289	119,699	320,686	13,218	519,343	1,019,668	66.5	514,621	388,033	359,927	295,175	435,016
	3 mos.	434	3,831,054	.....	4,261,292	364,879	900,462	39,970	1,560,527	3,002,482	70.5	1,258,810	928,310	864,693	763,068	1,090,388
Erie	March	2,297	5,549,593	414,100	6,457,357	508,734	1,250,110	168,585	2,529,822	4,761,446	73.7	1,695,911	1,324,283	1,153,873	1,104,249	1,477,431
	3 mos.	2,297	16,725,533	1,266,582	19,341,430	1,460,345	3,773,637	500,340	7,598,806	14,237,192	73.6	5,104,238	3,989,354	3,381,225	2,888,883	4,355,928
New Jersey & New York	March	45	13,008	48,277	63,140	4,509	14,910	664	50,161	71,742	113.6	—8,602	—12,752	—27,599	—36,962	—27,588
	3 mos.	45	47,322	144,968	197,516	13,412	42,687	1,987	151,856	214,462	108.6	—16,946	—29,396	—75,484	—113,238	—75,451
New York, Susquehanna & West.	March	215	238,166	23,987	275,232	25,369	35,929	4,708	130,470	209,804	76.2	65,428	43,828	19,037	14,400	24,860
	3 mos.	215	862,428	72,199	976,125	73,770	113,758	14,446	430,226	673,055	69.0	303,070	238,270	164,960	75,103	182,600
Florida East Coast	March	712	610,128	444,333	1,184,853	99,379	135,925	24,595	340,661	676,134	57.1	508,719	420,405	360,475	234,182	417,846
	3 mos.	712	1,624,713	1,164,102	3,129,071	293,199	405,723	74,347	938,431	1,915,237	61.2	1,213,834	984,182	852,557	431,223	1,024,669
Fort Smith & Western	March	249	55,224	804	59,402	16,063	9,115	5,327	19,859	53,667	90.3	5,735	3,935	—3,612	—8,684	—3,042
	3 mos.	249	189,338	2,304	202,182	43,649	27,391	15,597	61,409	158,996	78.6	43,186	37,786	17,359	—9,069	19,067
Georgia Railroad	March	329	276,626	12,602	316,531	33,374	57,094	16,984	133,380	254,680	80.5	61,851	55,514	63,558	55,234	75,138
	3 mos.	329	736,494	37,107	844,024	81,648	171,189	51,113	377,231	722,282	85.6	121,742	102,860	132,645	112,687	167,384
Georgia & Florida	March	408	101,765	2,039	108,367	21,550	17,228	8,518	35,988	88,907	82.0	19,460	12,310	10,723	19,732	15,931
	3 mos.	408	252,466	5,863	270,297	60,024	52,311	24,871	102,868	257,128	95.1	13,169	—4,594	—8,989	—4,230	6,653
Grand Trunk Western	March	1,032	1,809,050	57,386	2,018,824	189,166	407,890	34,878	826,655	1,547,812	76.7	471,012	344,757	314,499	279,585	452,105
	3 mos.	1,032	5,046,734	213,367	5,695,693	525,507	1,113,117	101,880	2,396,357	4,399,557	77.2	1,296,136	995,302	837,999	480,398	1,149,395
Canadian Nat'l Lines in New Eng.	March	172	117,135	3,062	131,445	36,798	20,626	2,402	62,685	133,335	101.4	—1,890	—14,721	—39,134	—51,735	—35,995
	3 mos.	172	288,181	15,456	331,475	93,097	67,978	6,977	185,537	381,277	115.0	—49,802	—88,249	—163,150	—177,305	—154,584
Great Northern	March	8,250	5,016,203	355,860	5,858,964	503,067	1,108,092	178,140	2,260,774	4,305,459	73.5	1,553,505	914,860	744,884	410,693	1,062,303
	3 mos.	8,250	12,634,592	1,043,099	15,025,122	1,513,194	3,318,985	497,508	6,761,323	12,878,816	85.7	2,146,306	636,937	439,868	125,839	1,371,416

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Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1936—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: After depr.& retir. 1936	After depr.& retir. 1935	Before depr.& ret.
Green Bay & Western	March	234	$125,832	$699	$131,312	$21,639	$16,705	$5,755	$44,650	$92,846	70.7	$38,466	$28,350	$22,269	$23,974	$26,311
	3 mos.	234	367,242	2,187	382,599	75,100	47,914	17,198	138,085	290,894	76.0	91,705	67,740	50,068	44,126	62,525
Gulf & Ship Island	March	259	132,030	8,395	160,721	19,274	17,048	3,222	62,262	107,354	66.8	53,367	37,796	26,340	—4,279	31,145
	3 mos.	259	291,235	22,483	358,643	56,012	45,311	10,282	169,583	299,154	83.4	59,489	16,327	—12,339	—38,200	—169
Gulf, Mobile & Northern	March	936	550,608	21,815	597,732	62,526	92,721	35,796	157,969	374,412	62.64	223,320	171,320	107,140	67,130	126,163
	3 mos.	936	1,513,723	64,932	1,646,899	191,985	270,400	104,321	461,819	1,112,375	67.54	534,525	413,745	240,755	80,882	297,731
Illinois Central	March	4,976	6,633,608	715,401	7,936,647	608,491	1,771,205	216,635	3,070,064	6,072,354	76.5	1,864,293	1,211,286	1,008,821	1,100,435	1,556,076
	3 mos.	4,978	19,666,518	2,277,921	23,634,020	1,926,792	5,068,528	696,458	9,488,702	18,413,451	77.9	5,220,569	3,541,677	3,029,649	2,726,729	4,685,484
Yazoo & Mississippi Valley	March	1,619	1,082,915	55,704	1,212,396	92,591	188,963	31,671	464,071	833,879	68.8	378,517	240,841	156,168	59,388	199,828
	3 mos.	1,619	2,872,389	173,732	3,271,252	270,077	529,631	101,483	1,370,279	2,437,906	74.5	833,346	454,989	207,343	—95,744	334,156
Illinois Central System	March	6,596	7,716,523	771,105	9,149,043	701,082	1,960,168	248,306	3,534,135	6,906,233	75.5	2,242,810	1,449,627	1,174,989	1,166,611	1,765,904
	3 mos.	6,597	22,538,907	2,451,653	26,905,272	2,196,869	5,598,159	747,941	10,858,981	20,851,357	77.5	6,053,915	3,990,106	3,259,892	2,654,560	5,042,540
Illinois Terminal	March	519	373,942	69,533	479,899	41,752	67,709	16,858	158,544	301,967	62.92	177,932	141,725	119,797	109,982	138,757
	3 mos.	519	1,134,955	211,681	1,450,471	122,501	197,992	48,362	497,192	920,857	63.49	529,614	433,440	375,349	248,782	432,230
Kansas City Southern	March	878	923,379	13,918	1,035,017	94,080	162,828	48,646	292,521	670,655	64.8	364,362	276,362	220,722	102,200	249,169
	3 mos.	878	2,609,344	44,215	2,947,485	253,250	465,305	142,900	876,434	1,945,908	66.0	1,001,577	763,577	612,854	166,423	698,090
Kansas, Oklahoma & Gulf	March	326	188,789	471	191,416	25,709	20,625	7,747	40,701	97,011	50.7	94,405	69,684	52,931	33,260	55,016
	3 mos.	326	567,295	1,484	576,095	49,434	65,926	23,182	121,841	278,150	48.3	297,945	245,090	200,229	128,043	206,486
Lake Superior & Ishpeming	March	160	37,561	92	39,728	18,797	31,146	553	22,542	78,769	198.3	—39,041	—55,550	—56,690	—50,344	—43,411
	3 mos.	160	106,631	287	113,284	60,463	88,174	1,653	69,124	237,047	209.3	—123,763	—169,627	—174,038	—157,889	—134,201
Lehigh & Hudson River	March	96	110,375	201	112,064	11,272	20,203	3,460	45,401	87,112	77.7	24,952	13,420	1,492	11,173	5,284
	3 mos.	96	365,105	412	368,201	32,070	60,350	10,112	147,553	269,965	73.3	98,236	64,071	26,582	44,330	37,955
Lehigh & New England	March	219	199,909	267	202,771	28,711	69,828	6,202	100,417	222,947	110.0	—20,176	—25,016	—16,890	28,497	1,272
	3 mos.	219	894,093	959	901,427	96,605	213,255	18,679	348,072	725,347	80.5	176,080	137,320	143,296	150,400	197,781
Lehigh Valley	March	1,336	3,118,845	194,758	3,564,715	274,868	730,290	112,750	1,762,913	3,041,957	85.3	522,758	320,099	163,193	111,028	354,387
	3 mos.	1,336	10,116,463	658,569	11,523,174	835,844	2,125,550	334,042	5,478,723	9,263,312	80.4	2,259,862	1,651,474	1,136,275	1,147,702	1,712,810
Louisiana & Arkansas	March	606	447,991	8,940	474,116	64,983	68,121	26,694	119,962	297,507	62.7	176,609	132,740	110,454	67,155	124,792
	3 mos.	606	1,243,625	25,477	1,319,098	158,859	189,118	84,073	348,916	834,934	63.3	484,164	363,885	309,797	183,412	352,851
Louisiana, Arkansas & Texas	March	255	97,923	191	101,799	28,437	10,712	4,622	31,594	80,135	79.7	21,664	17,126	343	—3,282	1,132
	3 mos.	255	265,582	536	276,274	68,530	28,148	13,803	90,799	215,171	77.9	61,103	50,382	6,057	—13,353	8,295
Louisville & Nashville	March	5,009	6,025,356	495,692	7,063,749	742,582	1,850,060	192,586	2,411,993	5,522,691	78.2	1,541,058	1,104,085	1,199,596	1,111,162	1,549,337
	3 mos.	5,009	18,358,469	1,540,713	21,432,704	2,182,233	5,239,864	574,470	7,438,763	16,408,058	76.6	5,024,646	3,623,958	3,889,543	3,110,393	4,935,877
Maine Central	March	1,046	820,891	55,989	963,671	247,514	186,048	11,832	410,426	895,026	94.7	68,645	—4,093	—81,986	123,219	—126,608
	3 mos.	1,046	2,579,144	219,630	3,061,963	598,414	595,189	30,372	1,245,957	2,588,260	84.5	473,703	291,638	70,784	258,942	204,732
Midland Valley	March	361	96,866	22	98,295	13,247	14,551	2,509	28,206	63,323	64.4	34,972	27,029	18,908	2,736	21,035
	3 mos.	361	373,444	75	377,996	30,299	33,414	7,200	91,228	179,617	47.5	198,379	175,130	146,837	72,796	153,199
Minneapolis & St. Louis	March	1,624	684,073	11,206	731,174	70,679	118,429	34,659	319,163	573,202	78.4	157,972	117,860	63,797	—4,767	92,965
	3 mos.	1,624	1,768,252	33,274	1,903,888	222,556	360,256	102,758	939,122	1,729,779	90.9	174,109	72,255	—63,602	—141,807	24,100
Minneapolis, St. Paul & S. S. Marie	March	4,296	1,821,841	89,481	2,059,076	262,346	392,215	56,213	891,373	1,712,037	83.1	347,039	172,926	59,934	—204,466	162,246
	3 mos.	4,296	4,803,548	239,841	5,460,973	804,830	1,084,343	169,025	2,726,960	5,111,021	93.6	349,952	—98,297	—449,785	—864,935	—142,813
Duluth, South Shore & Atlantic	March	550	164,849	11,051	187,888	28,538	31,618	4,139	85,891	155,324	82.7	32,564	21,068	18,775	5,394	26,556
	3 mos.	550	442,605	30,508	506,788	84,665	97,934	12,605	249,692	460,025	90.8	46,763	17,869	4,236	—45,939	27,668
Spokane International	March	163	46,056	1,642	52,502	7,344	6,629	1,935	20,905	40,911	77.9	11,591	6,748	2,998	—6,119	4,629
	3 mos.	163	127,682	4,666	148,477	23,498	17,444	5,564	62,060	120,625	81.2	27,852	15,353	6,250	—23,985	10,025
Mississippi Central	March	150	73,601	1,096	76,921	12,329	11,375	6,944	20,171	56,001	72.8	20,920	16,914	12,617	—105	14,864
	3 mos.	150	193,482	4,042	204,235	34,342	32,855	20,496	59,294	162,941	79.8	41,294	31,552	21,156	—11,999	27,876
Missouri-Arkansas	March	364	87,800	1,099	94,631	16,148	9,560	4,287	31,458	65,588	69.3	29,043	25,854	15,326	.....	16,157
	3 mos.	364	212,784	3,571	234,261	49,928	29,707	13,409	85,393	191,432	81.7	42,829	36,553	11,548	.....	14,056
Missouri-Illinois	March	208	73,942	595	76,298	21,437	12,664	2,435	28,042	70,183	92.0	6,115	1,517	—8,030	6,279	—4,218
	3 mos.	208	220,712	1,748	227,496	46,082	35,818	6,968	85,511	189,934	83.5	37,562	22,034	—3,327	14,843	7,236
Missouri-Kansas-Texas Line	March	3,293	2,058,957	163,960	2,454,600	302,798	477,131	111,773	885,124	1,921,389	78.3	533,211	344,564	132,672	29,609	239,757
	3 mos.	3,293	5,892,156	475,037	7,017,417	858,400	1,371,549	338,264	2,673,157	5,662,712	80.7	1,354,705	863,130	254,289	—443,866	575,535
Missouri Pacific	March	7,228	6,063,998	340,572	6,976,394	976,872	1,481,314	221,638	2,549,523	5,530,063	79.3	1,446,331	981,165	504,730	104,269	854,485
	3 mos.	7,228	18,078,295	1,090,344	20,845,150	2,389,162	4,182,699	686,435	7,947,830	16,105,362	77.3	4,739,788	3,531,564	2,079,980	378,268	3,132,165
Gulf Coast Lines	March	1,763	1,090,156	30,518	1,178,320	158,160	191,205	43,882	345,473	784,835	66.61	393,485	323,895	182,317	1,512	.....
	3 mos.	1,763	3,260,858	94,246	3,517,251	459,957	558,292	129,553	1,015,773	2,302,719	65.47	1,214,532	1,039,950	624,322	313,055	.....

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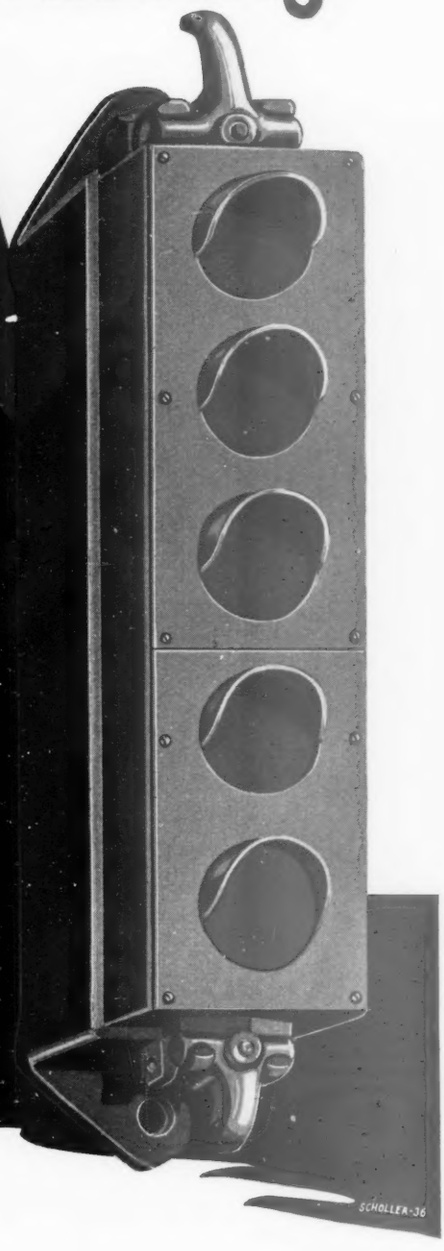
You Would'nt Think of Running Engines Without Throttles ---



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1881 **Union Switch & Signal Co.** 1936

SWISSVALE, PA.

NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1936—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: After depr. & retir. 1936	After depr. & retir. 1935	Before depr. & ret.
International Great Northern	March	1,154	$818,619	$64,352	$984,706	$147,485	$194,711	$29,120	$398,979	$829,303	84.22	$155,403	$98,397	—$8,122	$5,530	$21,494
	3 mos.	1,154	2,337,455	190,116	2,820,744	412,764	587,943	90,285	1,170,515	2,427,444	86.06	393,300	255,529	—21,481	93,656	68,708
Mobile & Ohio	March	1,201	818,697	22,412	891,181	106,929	197,575	39,682	317,712	702,664	78.8	188,517	132,511	75,459	—33,526	126,771
	3 mos.	1,201	2,115,577	69,969	2,327,444	298,323	489,579	123,172	909,108	1,942,037	83.4	385,407	258,088	97,855	—161,513	251,876
Monongahela	March	174	334,093	924	336,893	36,826	26,614	410	79,624	146,905	43.6	189,988	166,884	92,567	171,274	97,829
	3 mos.	174	1,207,316	3,106	1,216,644	96,710	88,307	1,235	278,764	475,109	39.1	741,535	679,012	427,186	359,780	444,523
Montour	March	57	120,859	.....	121,650	11,577	33,927	873	38,019	90,734	74.6	30,916	18,227	37,986	79,174	48,916
	3 mos.	57	461,932	.....	466,613	29,573	112,153	2,805	132,993	296,989	63.6	169,624	124,232	174,050	193,977	206,840
Nashville, Chattanooga & St. Louis	March	1,154	797,935	99,866	1,208,607	139,804	248,010	59,636	466,969	980,070	81.1	228,537	182,428	169,499	58,985	213,824
	3 mos.	1,154	2,614,151	303,893	3,300,774	373,716	733,922	198,072	1,388,844	2,894,536	87.7	406,238	269,728	229,289	68,976	362,656
Nevada Northern	March	165	35,737	2,101	42,861	8,265	2,801	880	9,708	25,471	59.4	17,390	9,410	12,273	6,803	18,223
	3 mos.	165	116,033	4,290	135,061	24,631	9,784	2,593	29,854	78,492	58.1	56,569	33,856	42,095	4,913	59,945
New York Central	March	11,214	21,002,974	4,726,957	29,093,943	2,744,979	6,326,675	520,228	11,001,956	22,060,101	75.8	7,033,842	4,827,086	3,398,320	3,092,486	4,747,123
	3 mos.	11,214	61,035,970	15,103,787	85,286,164	8,013,050	18,855,131	1,553,845	33,057,762	65,973,806	77.4	19,312,358	13,097,546	8,775,989	7,604,326	12,821,805
Pittsburgh & Lake Erie	March	233	1,255,373	46,855	1,349,959	151,325	442,959	26,394	495,898	1,201,973	89.0	147,986	39,923	218,094	290,306	358,453
	3 mos.	233	3,981,422	168,510	4,262,001	347,692	1,437,635	79,637	1,558,782	3,672,972	86.2	589,029	247,091	773,038	840,486	1,223,985
New York, Chicago & St. Louis	March	1,704	3,197,013	62,513	3,364,471	312,628	485,825	110,604	1,146,201	2,180,828	64.8	1,183,643	1,037,515	739,552	694,065	868,274
	3 mos.	1,704	9,156,404	197,204	9,678,754	777,047	1,429,150	342,557	3,442,159	6,370,252	65.8	3,308,502	2,870,502	2,015,584	1,696,955	2,402,877
New York, New Haven & Hartford	March	2,054	3,349,759	1,881,003	6,030,411	1,172,302	1,125,996	79,649	2,559,626	5,347,759	88.7	682,652	192,652	—375,934	627,683	—90,955
	3 mos.	2,058	10,345,201	5,987,328	18,537,323	2,556,450	3,335,332	248,048	7,421,155	14,806,040	79.9	3,731,283	2,451,283	756,792	1,764,581	1,611,669
New York Connecting	March	20	221,868	.....	234,297	10,297	12,437	.....	31,076	54,998	23.5	179,299	144,244	109,663	123,549	109,663
	3 mos.	20	687,987	.....	717,302	25,426	24,432	.....	92,869	147,012	20.5	570,290	467,005	368,603	364,956	368,603
New York, Ontario & Western	March	566	616,494	3,424	676,257	72,803	155,714	10,846	294,699	559,851	82.8	116,406	66,079	22,778	—63,414	47,594
	3 mos.	566	2,091,030	19,509	2,281,433	231,484	443,753	31,885	[illegible]43,551	1,834,921	80.4	446,512	321,901	210,168	186,776	284,604
Norfolk & Western	March	2,166	6,851,169	152,775	7,224,711	766,959	1,146,929	122,972	1,633,706	3,886,041	53.8	3,338,670	2,445,713	2,806,006	2,063,617	3,179,589
	3 mos.	2,166	19,969,231	472,433	21,074,542	2,279,516	3,292,633	370,808	5,004,978	11,604,338	55.1	9,470,204	6,973,739	7,778,529	5,209,122	8,898,396
Norfolk Southern	March	834	346,803	5,730	369,908	64,663	49,563	23,053	138,952	297,490	80.4	72,418	44,518	26,787	37,838	37,811
	3 mos.	834	932,357	17,378	1,000,252	188,236	148,351	68,018	398,083	864,726	86.5	135,526	58,042	19,377	18,008	52,165
Northern Pacific	March	6,727	3,908,922	259,914	4,586,590	381,869	1,095,603	152,022	1,805,456	3,782,527	82.5	804,063	244,640	568,809	281,169	830,161
	3 mos.	6,727	10,186,865	814,748	12,173,431	1,203,720	3,173,134	433,670	5,548,644	11,355,453	93.3	817,978	—685,318	295,054	—196,032	1,075,964
Northwestern Pacific	March	351	167,991	69,209	264,757	44,332	49,169	3,968	143,241	254,922	96.3	9,835	—4,270	—8,879	—33,503	5,551
	3 mos.	351	517,344	191,810	783,302	126,291	149,678	11,448	442,798	771,456	98.5	11,846	—19,873	—35,369	—140,136	7,933
Oklahoma City-Ada-Atoka	March	132	53,471	306	55,971	7,496	961	668	11,329	22,066	39.4	33,905	31,536	25,106	2,049	25,113
	3 mos.	132	123,854	1,067	131,176	14,583	3,000	2,273	30,482	55,127	42.0	76,049	69,214	57,897	16,461	57,919
Pennsylvania	March	10,442	23,235,457	4,918,216	31,252,047	2,700,967	6,670,204	608,952	11,962,803	23,779,064	76.1	7,472,983	4,679,419	3,782,149	6,269,028	5,607,665
	3 mos.	10,442	72,448,993	16,513,477	97,769,028	9,355,730	20,864,750	1,831,147	37,516,981	75,213,797	76.9	22,555,231	16,129,388	13,800,603	16,025,799	19,089,463
Long Island	March	396	516,186	1,292,163	1,896,199	141,278	354,860	13,842	954,436	1,527,776	80.6	368,423	192,443	23,311	—62,866	121,841
	3 mos.	396	1,577,244	3,858,500	5,679,197	471,224	1,081,410	49,969	3,000,028	4,787,395	84.3	891,802	458,633	—19,280	—248,545	277,327
Penna.-Reading Seashore Lines	March	412	219,974	107,305	344,323	56,547	77,613	7,069	253,764	422,461	122.7	—78,138	—156,104	—224,558	—210,936	—217,265
	3 mos.	412	786,371	316,608	1,154,742	202,142	217,841	19,354	778,464	1,300,850	112.7	—146,108	—355,896	—563,194	—691,271	—541,315
Pere Marquette	March	2,115	2,580,225	51,723	2,752,962	259,148	534,717	65,567	998,405	1,952,899	70.9	800,063	686,397	537,822	386,319	748,833
	3 mos.	2,115	7,170,855	212,635	7,725,247	816,016	1,616,040	191,900	2,990,643	5,896,525	76.3	1,828,722	1,487,017	1,181,140	1,121,875	1,816,646
Pittsburg & Shawmut	March	103	44,245	455	45,393	16,401	18,515	1,551	15,050	54,837	120.9	—9,444	—11,480	—8,147	28,805	—2,336
	3 mos.	103	164,724	1,384	168,842	37,315	55,402	4,599	53,582	161,775	95.8	7,067	4,094	4,834	47,052	22,267
Pittsburgh & West Virginia	March	138	261,670	.....	279,437	26,169	65,139	17,087	58,314	190,860	68.3	88,577	66,215	100,896	98,090	123,382
	3 mos.	138	783,552	.....	837,431	72,733	196,521	47,975	180,408	566,149	67.6	271,282	205,355	309,114	258,280	376,719
Pittsburg, Shawmut & Northern	March	190	84,555	24	85,985	14,688	16,595	1,368	32,810	73,221	85.1	12,764	10,568	4,361	13,648	7,062
	3 mos.	190	267,842	181	272,587	40,637	51,380	4,089	104,952	221,932	81.4	50,655	43,923	23,476	3,500	31,486
Reading	March	1,456	3,903,605	349,480	4,480,007	321,604	870,396	73,808	1,852,360	3,349,444	74.8	1,130,563	785,468	834,525	829,901	1,100,706
	3 mos.	1,456	12,905,671	1,028,020	14,582,305	1,146,845	2,554,922	222,035	5,940,484	10,561,334	72.4	4,020,971	2,972,613	3,068,637	2,690,578	3,869,518
Richmond, Fredericksburg & Potom	March	117	332,447	232,179	726,922	59,686	138,347	8,391	287,444	546,713	75.2	180,209	130,318	79,312	92,613	106,756
	3 mos.	117	891,431	708,174	2,001,454	176,761	393,279	27,357	837,636	1,587,527	79.3	413,927	301,715	152,892	135,224	233,918
Rutland	March	407	171,626	28,386	252,487	71,730	53,961	10,149	143,950	293,981	116.4	—41,494	—54,456	—56,685	—28,074	—45,248
	3 mos.	407	502,194	91,598	742,315	148,706	164,400	29,639	428,803	813,696	109.6	—71,381	—110,039	—105,420	—80,099	—71,062
St. Louis San Francisco	March	4,928	3,025,737	218,521	3,576,657	544,437	900,537	108,690	1,359,701	3,089,978	86.4	486,679	202,295	226,265	—95,532	495,621
	3 mos.	4,928	8,944,714	692,903	10,592,869	1,556,386	2,618,919	327,765	4,068,661	9,088,089	85.8	1,504,780	726,361	842,705	—217,799	1,650,703

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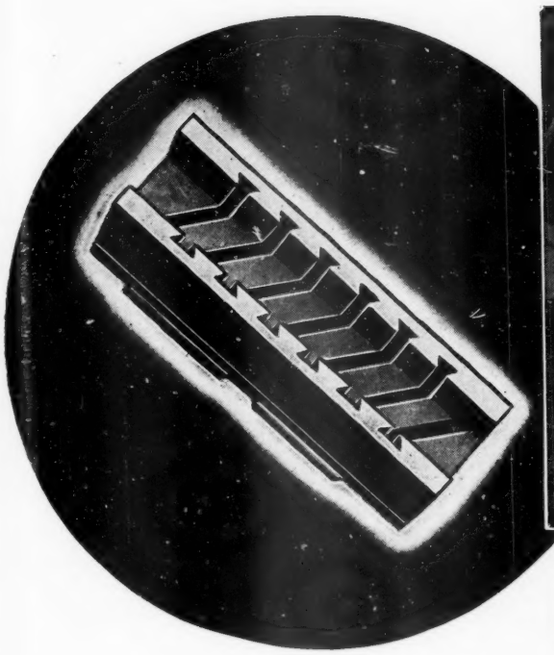

MORE MILEAGE From Many Parts

WHEN Crossheads start to pound, destructive impacts are transmitted to every part of the running gear.

Crosshead Shoes made of HUNT-SPILLER *Air Furnace* GUN IRON wear much longer—destructive pounds are greatly reduced and more mileage is obtained from many other parts of the locomotive.

In addition to big savings in crosshead maintenance—such parts as guides, wrist pins, rod bearings, pistons—give much longer, trouble-free service when crosshead shoes are of HUNT-SPILLER *Air Furnace* GUN IRON.

HSGI
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Parts Finished For Application
Dunbar Sectional Type Packing
Duplex Sectional Type Packing for Cylinders and Valves
(Duplex Springs for Above Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes

HUNT-SPILLER MFG. CORPORATION
J. G. Platt Pres. & Gen. Mgr. / V. W. Ellet Vice-President
Office & Works
383 Dorchester Ave. South Boston, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote, St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER *Air Furnace* GUN IRON

Revenues and Expenses of Railways

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1936—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: After depr. & retir. 1936	After depr. & retir. 1935	Before depr. & ret.
Fort Worth & Rio Grande	March	233	$30,337	$729	$38,140	$14,172	$7,297	$1,994	$22,781	$48,615	127.5	—$10,475	—$15,352	—$21,768	—$26,945	—$21,717
	3 mos.	233	89,961	2,095	112,402	45,675	23,465	6,967	72,330	157,772	140.4	—45,370	—57,640	—77,841	—84,906	—77,688
St. Louis, San Francisco & Texas	March	261	81,142	597	86,522	40,743	14,062	5,576	39,909	105,733	122.2	—19,211	—25,622	—55,504	—49,031	—55,339
	3 mos.	261	246,000	1,733	260,352	121,748	39,444	16,398	126,654	324,772	124.7	—64,420	—78,773	—170,591	—155,174	—170,095
St. Louis Southwestern Lines	March	1,784	1,617,910	14,664	1,690,782	168,548	245,530	73,048	476,609	1,029,301	60.9	661,481	563,590	400,205	305,769	450,868
	3 mos.	1,784	4,313,611	46,406	4,524,235	433,297	683,445	223,852	1,409,480	2,953,029	65.3	1,571,206	1,325,296	870,702	694,814	1,022,558
Seaboard Air Line	March	4,307	2,728,353	531,081	3,686,165	465,307	670,679	154,857	1,312,543	2,814,555	76.4	871,610	646,610	503,543	481,789	660,298
	3 mos.	4,307	7,343,559	1,611,547	10,003,344	1,345,297	1,998,789	460,062	3,782,955	8,196,294	81.9	1,807,050	1,042,050	656,22-	609,581	1,126,184
Southern Railway	March	6,641	6,384,354	703,949	7,780,374	931,465	1,411,131	154,109	2,723,133	5,524,752	71.0	2,255,622	1,808,839	1,532,757	1,235,516	1,803,383
	3 mos.	6,641	18,312,838	2,201,832	22,451,946	2,805,855	4,049,100	456,315	8,252,876	16,469,954	73.4	5,981,992	4,628,844	3,805,316	2,845,662	4,617,381
Alabama Great Southern	March	315	451,486	41,281	532,439	81,877	112,076	10,627	168,848	392,416	73.7	140,023	106,566	82,713	10,185	105,958
	3 mos.	315	1,214,937	124,412	1,448,269	240,666	310,740	33,713	480,723	1,122,334	77.5	325,935	224,845	165,469	12,427	235,191
Cinn., New Orleans & Tex. Pacific	March	336	1,155,699	99,361	1,336,340	189,859	233,868	24,604	327,272	824,856	61.7	511,484	414,231	393,234	278,100	443,162
	3 mos.	336	3,224,568	369,972	3,818,386	527,158	672,334	73,586	989,001	2,409,906	63.1	1,408,480	1,137,128	1,081,629	721,930	1,231,427
Georgia Southern & Florida	March	397	135,220	54,424	213,134	31,986	39,371	1,952	95,005	177,121	83.1	36,013	23,503	12,158	8,201	19,223
	3 mos.	397	347,422	199,149	612,867	93,321	110,375	5,650	274,975	510,587	83.3	102,280	64,689	42,997	—5,592	64,188
New Orleans & Northeastern	March	204	197,274	16,907	230,724	29,645	35,167	5,183	74,519	154,923	67.2	75,801	53,739	28,195	14,575	34,240
	3 mos.	204	528,231	49,360	623,217	90,326	108,240	16,374	213,861	460,093	73.8	163,124	96,754	32,627	1,069	50,788
Northern Alabama	March	100	61,736	1,677	65,432	12,674	1,508	1,434	18,122	35,463	54.2	29,969	25,960	13,567	2,587	13,638
	3 mos.	100	175,046	4,977	185,594	33,177	4,322	3,574	55,059	101,319	54.6	84,275	72,299	35,878	4,432	36,090
Southern Pacific	March	8,772	8,850,244	1,483,646	11,165,783	1,112,815	2,041,327	297,136	4,124,500	8,372,463	75.0	2,793,320	1,787,511	1,233,615	1,045,597	1,712,434
	3 mos.	8,774	24,426,926	4,587,625	31,454,260	3,326,949	5,860,165	869,288	12,051,182	24,503,986	77.9	6,950,274	4,326,678	2,920,712	2,273,280	4,365,881
Southern Pacific Steamship Lines	March	....	439,451	12,468	470,058	16,824	89,321	15,818	316,407	456,891	97.2	13,167	3,224	2,972	—39,731	38,321
	3 mos.	....	1,183,600	39,287	1,272,966	46,640	267,666	50,124	952,413	1,372,242	107.8	—99,276	—114,170	—114,925	—212,105	—8,925
Texas & New Orleans	March	4,429	2,903,358	230,646	3,423,560	406,670	648,480	119,254	1,102,215	2,488,324	72.7	935,236	649,985	465,911	329,888	607,247
	3 mos.	4,429	8,074,609	716,460	9,543,581	1,239,679	1,848,626	360,432	3,285,912	7,392,500	77.5	2,151,081	1,440,958	882,187	495,846	1,302,899
Spokane, Portland & Seattle	March	946	509,411	33,847	602,507	72,542	87,967	10,033	225,189	424,014	70.4	178,493	98,691	49,215	92,887	65,701
	3 mos.	946	1,370,508	96,410	1,612,706	194,489	241,813	24,586	673,720	1,216,103	75.4	396,603	183,896	33,097	84,311	82,637
Tennessee Central	March	286	179,649	4,806	196,672	39,070	32,680	5,480	66,854	153,627	78.1	43,045	36,709	25,064	26,856	31,047
	3 mos.	286	551,097	15,417	602,094	95,836	90,628	16,219	206,985	438,776	72.9	163,318	143,717	108,135	88,256	126,098
Texas & Pacific	March	1,949	1,843,595	175,690	2,201,184	236,137	409,758	71,143	651,195	1,498,865	68.1	702,319	555,654	454,739	323,559	551,868
	3 mos.	1,949	5,187,828	519,818	6,216,152	722,368	1,112,871	210,262	1,919,190	4,356,093	70.1	1,860,059	1,506,408	1,170,051	786,174	1,461,249
Texas Mexican	March	162	102,654	303	112,893	20,522	15,424	3,492	33,501	79,220	70.2	33,673	27,277	22,000	9,102	23,813
	3 mos.	162	282,854	1,556	313,872	55,526	44,354	10,012	96,870	227,183	72.4	86,689	70,692	54,073	81,416	59,512
Toledo, Peoria & Western	March	239	191,579	9	193,938	52,057	12,921	16,851	49,144	139,024	71.7	54,914	44,385	24,817	13,684	36,320
	3 mos.	239	534,408	37	541,585	134,856	33,642	49,366	141,775	383,783	70.9	157,802	129,339	80,632	34,300	115,295
Union Pacific System	March	9,825	9,433,059	929,810	11,296,102	1,592,596	2,371,455	304,591	3,777,451	8,775,209	77.7	2,520,893	1,417,335	916,940	**1,267,344**	**1,447,273**
	3 mos.	9,825	26,505,742	2,716,944	31,827,939	3,621,667	6,806,942	880,566	11,559,820	25,107,596	78.9	6,720,343	3,747,118	2,342,201	2,423,315	3,928,749
Utah	March	111	81,724	.....	81,834	15,098	21,567	486	21,051	63,153	77.2	18,681	8,697	8,371	9,834	18,192
	3 mos.	111	358,962	.....	360,796	48,940	75,803	1,524	86,441	226,421	62.8	134,375	94,095	76,176	34,913	105,637
Virginian	March	619	1,325,970	3,613	1,383,200	107,524	254,935	17,892	239,300	653,322	47.2	729,878	604,878	660,036	587,581	753,218
	3 mos.	619	4,186,302	11,017	4,371,260	297,803	745,032	55,360	760,195	1,961,910	44.9	2,409,350	1,944,350	2,071,539	1,769,966	2,351,038
Wabash	March	2,447	3,446,389	172,853	3,898,149	379,832	770,326	137,526	1,445,143	2,886,933	74.1	1,011,216	801,985	490,884	502,032	669,145
	3 mos.	2,447	9,702,437	584,312	11,163,014	1,100,340	2,108,670	416,443	4,346,099	8,437,847	75.6	2,725,167	2,190,199	1,312,516	1,085,587	1,847,938
Ann Arbor	March	293	346,230	2,637	356,625	22,176	80,477	11,683	150,999	277,944	77.9	78,681	58,760	45,793	55,049	65,954
	3 mos.	293	954,824	8,448	984,693	77,988	215,015	35,035	448,689	814,484	82.7	170,209	119,986	83,196	110,572	143,675
Western Maryland	March	882	1,255,046	5,647	1,301,286	121,322	286,459	38,238	346,427	842,035	64.7	459,251	359,251	356,581	452,453	451,627
	3 mos.	882	3,915,145	20,079	4,047,272	440,972	886,380	111,511	1,044,675	2,633,935	65.1	1,413,337	1,143,337	1,191,629	1,165,384	1,476,722
Western Pacific	March	1,207	972,792	36,962	1,036,910	161,741	199,442	55,448	436,806	897,196	86.5	139,714	60,053	—15,128	—6,208	36,528
	3 mos.	1,207	2,634,066	87,809	2,790,028	424,730	568,282	166,002	1,241,448	2,531,867	90.7	258,161	55,729	—123,957	—152,453	30,980
Wheeling & Lake Erie	March	511	1,075,820	1,344	1,132,812	153,882	306,442	29,778	341,959	863,412	76.2	269,400	164,786	176,931	64,758	278,283
	3 mos.	511	3,174,678	5,482	3,346,956	366,911	958,647	91,045	1,050,317	2,561,043	76.5	785,913	496,214	537,090	342,762	841,201
Wichita Falls & Southern	March	203	41,233	40	45,543	5,774	6,484	1,759	14,288	**32,040**	**70.35**	13,503	10,097	7,738	—601	9,694
	3 mos.	203	101,470	84	114,398	26,213	17,651	4,976	41,280	100,421	87.78	13,977	5,262	—342	—3,075	5,526

Annual Report

Minneapolis, St. Paul & Sault Ste. Marie Railway Co.

For the fiscal year ended December 31, 1935

To the Stockholders:

Submitted herewith is a report for the fiscal year ended December 31, 1935.

Railway Operating Revenues, Operating Expenses, Fixed Charges, Net Income, etc., are shown in the following condensed statement:

	Year 1935	Year 1934
Railway Operating Revenues	$13,369,369.90	$12,615,804.88
Railway Operating Expenses	11,487,444.80	10,758,355.20
Net Revenue from Railway Operations	$1,881,925.10	$1,857,449.68
Income from Other Sources	432,311.60	309,107.90
Total Income	$2,314,236.70	$2,166,557.58
Fixed Charges, Taxes, etc.	7,538,583.39	7,245,100.26
Net Deficit	$5,224,346.69	$5,078,542.68

Railway Operating Revenues were $13,369,370.00, an increase of $753,565.00, or 5.97%, compared with the previous year.

Freight Revenue was $11,481,873.00, an increase of $680,811.00, or 6.30%.

The increases and decreases in Freight Revenue were as follows:

Products of Agriculture	$314,523	Increase
Animals and Products	573,363	Decrease
Products of Mines	34,372	Increase
Products of Forests	355,548	Increase
Manufactures and Miscellaneous	549,002	Increase
Less than Carload Freight	729	Increase
Total Increase	$680,811	

Products of Agriculture increased during the year as a result of heavier movement of grain.

Shipments of grain to Minneapolis and Duluth markets from western territory tributary to our line, compared with corresponding shipments of the previous year, were as follows:

	1935 Bushels	1934 Bushels
Before August 1	3,517,225	6,790,170
After August 1	14,560,867	6,553,485
Total	18,078,092	13,343,655

The following table shows the grain crop harvested in each of the years shown and subsequently shipped to market over our line:

Year	Bushels	Year	Bushels
1915	83,527,877	1925	55,374,519
1916	34,233,059	1926	30,627,251
1917	28,560,411	1927	54,138,346
1918	52,002,485	1928	56,816,503
1919	30,393,424	1929	32,867,641
1920	41,232,301	1930	41,556,685
1921	36,832,469	1931	12,118,000
1922	59,429,961	1932	24,470,000
1923	34,657,645	1933	17,307,170
1924	66,280,641	1934	10,070,710

It is estimated that the corresponding figure for 1935 will be approximately 26,000,000 bushels.

Animals and Products decreased as a result of a lesser movement of livestock. During the previous year, due to lack of feed and water caused by drought, there were heavy shipments of distressed livestock from the farms, estimated at over 950,000 head from North Dakota alone.

Products of Mines increased as a result of heavier movements of iron ore, coal, and petroleum products. Iron ore shipped via our line from the Cuyuna Range to upper Lake Ports amounted to 441,031 tons compared with 291,775 tons in the previous year. Total iron ore shipments by all railroads from mines in Lake Superior District in 1935 amounted to 28,503,501 tons, compared with 22,003,380 tons in 1934.

Products of Forests increased as a result of improved industrial conditions and increased building construction and repairs.

Manufactures and Miscellaneous increased as a result of improved business conditions and a greater demand for manufactured merchandise, notwithstanding the inroads which truck competition continued to make on our miscellaneous commodities.

Less than Carload Freight revenues increased as a result of continued improvement in business conditions and the emergency increases in freight rates. Trucks and forwarding companies are still making large inroads on this class of traffic. Effective January 20, 1936, carriers in Western Trunk Line Territory inaugurated a general plan of offering free pick-up and delivery service in connection with less than carload merchandise traffic, and are hopeful of regaining a considerable portion of this business now being shipped by trucks.

Comparison of cars loaded on our line and received from connections, and revenue, 1931 to 1935 inclusive, are shown in the statement below:

(000 omitted from revenue)

	1931	1932	1933	1934	1935
Products, Agricultural:					
Cars	35,077	30,302	29,977	34,458	33,586
Revenue	$3,388	$2,982	$3,276	$2,503	$2,818
Products, Animal:					
Cars	15,566	11,740	12,215	17,301	9,241
Revenue	$1,210	$801	$813	$1,114	$540
Products, Mines:					
Cars	48,402	38,663	43,886	46,177	51,105
Revenue	$2,308	$1,934	$2,104	$2,120	$2,155
Products, Forests:					
Cars	39,403	24,228	29,347	27,250	33,843
Revenue	$1,696	$1,158	$1,266	$1,132	$1,488
Miscellaneous:					
Cars	41,936	32,028	31,848	39,616	46,503
Revenue	$3,117	$2,570	$2,450	$2,940	$3,488
Merchandise:					
Tons	154,980	105,326	110,870	101,450	98,713
Revenue	$1,560	$1,130	$1,150	$992	$993
Grand Total:					
Cars	180,384	136,961	147,273	164,802	174,278
Revenue	$13,279	$10,575	$11,059	$10,801	$11,482

Passenger Revenue was $727,295.00, an increase of $44,800.00, or 6.56%. The increase was due to improved business conditions in our territory, the popularity of our reduced fares, and increased travel to the Canadian Rockies and Pacific Coast points.

Revenue from Milk and Cream handled in baggage cars was $91,428.00, an increase of $4,412.00, or 5.07%. The increase was occasioned by better pasture and feed conditions than were prevalent in the previous year.

Department of Agricultural Development. The drought of 1934 left the Northwest very deficient in seed supplies. An organized program, in co-operation with the Seed Stocks Committee of the United States Department of Agriculture and the Extension Departments of the various States, was conducted. Seed orders were taken from more than 33,000 farmers for more than 5,000,000 bushels of wheat, oats, barley, and flax. Special emphasis was laid upon treating this new seed with fungicide and 52 large scale seed treaters were installed by elevators handling the seed in twenty-five counties.

The grasshopper eradication campaign was carried out very successfully in northwestern counties in North Dakota and it is hoped this pest has been entirely eliminated.

Experimental work for the improvement of corn, potatoes, alfalfa, and livestock was continued.

The combination of abundant non-marketable crops available for feed and depleted herds of stock along our line furnished the opportunity to conduct a successful campaign for the shipment of cattle from Canadian breeders to be fattened on feeding contracts en-route to the South St. Paul and Chicago markets. Approximately 1,400 head of yearling shorthorn steers were handled that way over our line with profit for the breeder, the feeder, and the railroad. It is expected that our long haul traffic will continue to be stimulated by such arrangements for feeding in transit.

Livestock activities with boys' and girls' 4-H Clubs were continued on a larger scale than in previous years. Over 200 shorthorn calves were placed with Club members in North Dakota on a share basis.

Bus and Truck competition continued to make severe inroads on our traffic. An improvement is hoped for with the elimination under the new Federal Motor Carrier Act of the advantage so long enjoyed by those forms of transportation in being able to change their rates, at will and without notice, to meet or forestall reductions of railroad rates, of which thirty days' notice had to be given before obtaining the necessary approval of the Interstate Commerce Commission. Under the new Act, interstate bus and truck rates must be filed with the Interstate Commerce Commission effective April 1, 1936, and

GENERAL BALANCE SHEET, DECEMBER 31, 1935

ASSETS

Property Investment:		
Road	$104,169,087.98	
Equipment	28,879,382.52	
	133,048,470.50	
Less Reserve for Equipment Depreciation	15,004,993.79	
Total		$118,043,476.71
Sinking Fund		256.68
Deposits in lieu of Mortgaged Property Sold		4,884.94
Miscellaneous Physical Property		648,493.71
Wis. Cent. Ry. Co., Preferred Stock (Pledged for M. St. P. & S. S. M. Ry. Co., 4% Leased Line Certificates)		11,256,400.00
Investments in Proprietary, Affiliated, and Controlled Companies:		
Stocks	$12,008,382.47	
Bonds	8,000,000.00	
W. C. Ry. Co. Advances	589,791.66	
Other Advances	2,902,050.80	
Total		23,500,224.93
Other Investments:		
Stocks	$1.00	
Bonds	1,826,200.00	
Notes	182,014.56	
Real Estate Sales Contracts	37,906.59	
Total		2,046,122.15
Current Assets:		
Cash	$720,316.85	
Special Deposits—Special Wisconsin Central Fiduciary Account	537,489.20	
Other Special Deposits	58,401.56	
Loans and Bills Receivable	1,804.74	
Traffic and Car Service Balances	200,679.39	
Agents and Conductors Balances	372,940.82	
Miscellaneous Accounts Receivable	434,494.77	
Material and Supplies	1,836,092.64	
Interest and Dividends Receivable	1,217.75	
Other Current Assets	11,724.89	
Total		4,175,162.61
Deferred Assets:		
Working Fund Advances	$21,604.62	
Other Deferred Assets	410,309.28	
W. C. Ry. Co. Advances Prior to Receivership	6,994,908.01	
Total		7,426,821.91
Unadjusted Debits:		
Rents and Insurance Paid in Advance	$29,085.93	
Discount on Funded Debt	642,292.50	
Discount on Canadian Funds (To be extinguished as loans are repaid)	579,905.32	
Other Unadjusted Debits	1,566,285.43	
Total		2,817,569.18
Grand Total		$169,919,412.82

LIABILITIES

Capital Stock:		
Common	$25,206,800.00	
Preferred	12,603,400.00	
Total		$37,810,200.00
Governmental Grants:		
Grants in Aid of Construction		22,522.60
Funded Debt Unmatured		92,004,800.00
M. St. P. & S. S. M. Ry Co. 4% Leased Line Certificates (Issued in exchange for Preferred Stock of Wis. Central Ry. Co., held by Trustee.)		11,256,400.00
Non-negotiable Debt to Affiliated Companies (Includes $18,552,139.73 payable in Canadian Funds stated at $18,436,188.86.)		19,229,237.36
Current Liabilities:		
Loans and Bills Payable	$12,812,729.72	
Traffic and Car Service Balances	365,556.74	
Audited Vouchers and Wages Payable	2,484,139.06	
Miscellaneous Accounts Payable	37,235.51	
Interest Matured Unpaid	2,005,414.00	
Interest Matured Unpaid (Leased Line Certificates)	*1,350,768.00	
Funded Debt Matured Unpaid	240,000.00	
Unmatured Interest Accrued	405,902.74	
Unmatured Rents Accrued	5,683.82	
Receiver of W. C. Ry. Co.	661,614.22	
Other Current Liabilities	150,231.66	
Total		20,519,275.47
Deferred Liabilities:		
Equipment Purchase Contracts	$685,107.02	
Other Deferred Liabilities	40,146.52	
Total		725,253.54
Unadjusted Credits:		
Tax Liability	$613,868.32	
Premium on Funded Debt	693.72	
Other Unadjusted Credits	543,763.96	
Total		1,158,326.00
Corporate Surplus:		
Additions to Property thru Income and Surplus	$242,307.27	
Profit and Loss, Debit Balance	13,048,909.42	
Deficit		12,806,602.15
Grand Total		$169,919,412.82

* Unpaid installments, liability for which is in dispute.

may be changed only on thirty days' notice. This will enable the railroads to gauge in advance the competition they have to meet.

Operating Expenses:

	1935	1934	Increase or Decrease	Per Cent
Gross Operating Revenue	$13,369,370	$12,615,805	$753,565	5.97
Expenses:				
Maintenance of Way and Structures	$2,110,729	$1,819,384	$291,345	16.01
Maintenance of Equipment	2,593,808	2,496,237	97,571	3.91
Traffic	419,978	407,541	12,437	3.05
Transportation	5,721,996	5,202,296	519,700	9.99
Miscellaneous	47,033	47,263	230*	.49
General	610,043	796,012	185,969*	23.36
Transportation for Investment—Credit	16,142*	10,378*	5,764*	55.54
Total Operating Expenses	$11,487,445	$10,758,355	$729,090	6.78
Operating Ratio	85.92	85.28	.64	....
Net Revenue from Railway Operation	$1,881,925	$1,857,450	$24,475	1.32

* Indicates red figures or decreases.

If the rates of pay which were in effect in 1934 had remained unchanged, the operating ratio would have decreased to 81.89.

Wage Restorations. In accordance with agreements with the labor organizations, wage restorations of 2½% and 5% were made on January 1 and April 1, 1935, respectively, which increased the company's payrolls in the various departments as follows:

Maintenance of Way and Structures	$89,936
Maintenance of Equipment	94,121
Traffic	13,710
Transportation	296.747
Miscellaneous	1,649
General Office	43,332
Total	$539,495

Maintenance of Way and Structures Expenses increased $291,345.00, or 16.01%. In addition to wage restorations above referred to, numerous other increases are reflected in the various labor and material accounts such as Ties, Rails, Ballast, etc. These expenditures were necessary to conserve the property in a safe and efficient operating condition for increased traffic which was handled during the year.

Maintenance of Equipment Expenses increased $97,571.00, or 3.91%. Wage restorations and increased expenditures for repairs to locomotives and equipment aggregating $312,000 were partially offset by decreases in charges for depreciation amounting to $204,700 on account of changes in the depreciation rates for various classes of equipment on instructions from the Interstate Commerce Commission. More equipment was reconditioned than in the preceding year due to prospects for a greatly increased grain crop.

Transportation Expenses increased $519,700.00, or 9.99%. The transportation ratio increased from 41.24 in 1934 to 42.80 in 1935 or 1.56% on account of wage restorations and increases in costs of fuel and other supplies used in moving the traffic. Gross ton miles, representing the transportation effort required to move the traffic, increased 4.83%.

General Expenses decreased $185,969.00, or 23.36%. Beginning August 1, 1934, in compliance with the provisions of the Railroad Retirement Act, this company included in its General Expenses the payments it would have been required to turn over to the United States Treasury in the event the Act had

been declared valid. The Act was declared unconstitutional on May 6, 1935. General Expenses were then credited with the amount previously accrued, which resulted in a difference of approximately $215,000. There was also a decrease in charges to Pensions under the company's voluntary Pension Plan. These decreases were partially offset by wage restorations amounting to $43,332.

Taxes increased $42,158.00 due to accounting adjustments and an increase in Minnesota Gross Earnings Tax accruals of $21,839.00.

Hire of Equipment increased $44,559.00 due to the necessity of securing equipment from foreign lines to move the grain crop.

Property Investment. The investment in road account shows a net increase for the year of $164,952.51 resulting from gross expenditures of $257,936.64, less retirements and accounting adjustments totaling $92,984.13. The major portion of the expenditures represents the application of tie plates. Abnormal retirements aggregating $134,880.59 included in the above figures represent the book value of 29,013 feet of yard tracks sold to the Ford Motor Company at Gladstone, 18,714 feet of various other side and yard tracks and 12 maintenance of way, station, and shop buildings no longer required because of discontinuances of, or reductions in service.

The equipment investment account shows a decrease for the year of $531,658.30, brought about through retirements and accounting adjustments totaling $550,793.23, partially offset by nominal expenditures for additions and betterments amounting to $19,134.93. The retirements include 9 locomotives, 296 freight train cars, 8 passenger train cars, and 9 work equipment units.

Funded and Unfunded Debt. The outstanding indebtedness was decreased by various payments during the year, aggregating $1,705,094.71, as follows:

Decreases:	
First Refunding Mortgage Bonds, Series A	$24,000.00
Twenty-five Year Gold Notes	125,000.00
Equipment Trust Notes	488,000.00
Equipment Purchase Contracts	120,991.54
Short-term Loans from Reconstruction Finance Corporation	58,675.51
Short-term Loans from The Railroad Credit Corporation	888,427.66
Total Decrease	$1,705,094.71

Non-Negotiable Debt to Affiliated Companies increased $5,544,124.65.

Wisconsin Central Railway Company. The Wisconsin Central properties are still in receivership; the Soo Line is still operating them as agent for the Receiver; the Court's decision that the Soo Line was entitled to terminate its lease of those properties still stands; and the controversy as to whether the lease was actually terminated is still pending.

As our figures show, the business for 1935 was an improvement over the previous year; but increased expenses (largely wages) brought results that were not very encouraging.

The brilliant crop prospects of June and early July were ruined by rust and extreme heat; so the results, while better than those of 1934, were far from normal. Fortunately the hay and all feed crops were good in practically all of our territory.

The western part of North Dakota, South Dakota, and the eastern part of Montana were very short of moisture during the fall of 1935. However, during the past winter this territory had considerable snow, which we hope will furnish sufficient moisture so that the spring seeding can be done under fairly good conditions. Yet there is no doubt that we must have heavy rains in this particular territory to bring about anything like satisfactory crop results for 1936.

In most cases the prices of grain and livestock during the past year were fairly good and resulted in satisfactory returns for those who had crops and livestock to sell.

Our general business has shown a fair improvement and the prospects are that this will continue during 1936. Increasing cost of doing business is something that is constantly before us and from which we can see no escape. Our property has been maintained at a point to well take care of our business; but with any increase in our crop out-turn and, we hope, an improvement in general business, additional expenditures for maintenance and equipment must be made.

The cooperation and loyal services rendered by the officers and employes during the year are very much appreciated.

C. T. JAFFRAY,
President.

Minneapolis, Minn.
April 21, 1936.

Annual Report

The Delaware, Lackawanna and Western Railroad Company

New York, March 25, 1936.

TO THE STOCKHOLDERS OF
THE DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY:

A report of the operations of the railroad and other property of your Company for the year 1935, showing in appropriate schedules details of operating results, property changes and other matters of interest, is respectfully submitted.

The volume of traffic handled by your Company during the present year was slightly less than in the year 1934, but there was an increase in total operating revenues due to an emergency allowance in freight tariff charges on designated commodities authorized by the Interstate Commerce Commission in Ex Parte 115, effective April 18, 1935, and extending to June 30, 1936. After these emergency increases became effective, it was found that many adjustments were necessary to remove inequalities, and in a number of instances the additional charges were substantially reduced or wholly cancelled on certain of the commodities moving in particular localities or territories in order to stimulate their movement and arrest, as far as possible, diversion of the traffic to other forms of transportation.

The additional revenue realized from the emergency increases for the period April 18 to December 31, 1935, was $1,025,757 or approximately 4.4% of the total freight revenue earned during that period.

Mention should be made in this connection of an indeterminable but very considerable loss of revenue incurred in the week following July 7, during which time various parts of your railroad were rendered impassable to freight and passenger trains by flood conditions hereinafter more fully described.

Freight traffic declined materially in the months of March, July and August of the present year, resulting in substantially reduced revenues, but there was a decided improvement in traffic conditions during the last four months of the year with encouraging increases in revenues.

Revenue from passenger transportation was slightly less than in the previous year, but passenger business increased perceptibly during the closing months with corresponding increase in receipts.

Revenues from transportation of United States mail decreased $82,736 or approximately 9%, due, in part, to diversions, but in a greater degree to changes in method of determining car space allowances, together with the continuation of a policy of service curtailment originated by the Post Office Department in April, 1934.

Revenues from express service rendered the Railway Express Agency were approximately the same as in the preceding year.

Revenue from milk transportation decreased $120,016, due, in part, to the reduced consumption of fluid milk in the Metropolitan area which had declined consistently for a period of three and one-half years to June 30, 1935; but in the remaining six months of the present year there was an increased demand and market conditions were so improved as to make the prospects for a better movement of milk in 1936 a reasonable anticipation. Diversion of this class of traffic from rail to motor transportation and forced reduction in rates to meet truck competition continue to be important factors in reducing milk transportation revenues.

Revenues from the transportation of passengers and vehicles over the ferries during the year both show satisfactory increases over the previous year.

The effect of the long period of depressed business activity on railroad earnings is illustrated by the following:

The average annual operating revenues of your Company for the five years 1925 to 1929, inclusive, were $84,000,807, while for the year 1935 like revenues amounted to only $44,722,233 or 46.4% less than in the years immediately preceding the depression.

The total operating costs exceeded those of the previous year by $1,461,709. This increase was primarily due to higher rates of pay granted under the national agreement between the railroads which provided for a 2½% increase effective July 1, 1934,

General Balance Sheet, December 31, 1935 and 1934

Assets

	1935	1934	Increase or *Decrease*
INVESTMENTS:			
Investment in Road and Equipment:			
Road	$54,617,777.01	$54,712,527.93	*$94,750.92*
Equipment	85,050,704.51	86,087,383.82	*1,036,679.31*
Improvements on Leased Railway Property	15,792,692.66	15,877,206.33	*84,513.67*
Miscellaneous Physical Property	2,457,933.73	2,274,259.95	183,673.78
Investments in Affiliated Companies:			
Stocks	9,487,356.37	9,487,154.37	202.00
Bonds	3,335,638.00	3,355,815.50	*20,177.50*
Notes	3,772,964.42	3,772,964.42	.....
Advances	4,761,649.99	4,727,199.90	34,450.09
Other Investments:			
Stocks	1,638,162.41	1,592,673.06	45,489.35
Bonds	*11,882,575.70	11,882,675.70	*100.00*
Notes	619,272.11	627,772.11	*8,500.00*
Advances	13,817,397.70	13,405,229.71	412,167.99
Miscellaneous	20,701.47	20,724.23	*22.76*
Total Investments	$207,254,826.08	$207,823,587.03	.....
CURRENT ASSETS:			
Cash	$2,704,692.64	$3,131,389.37	*426,696.73*
Special Deposits	.....	144,828.27	*144,828.27*
Loans and Bills Receivable	22,300.00	25,476.96	*3,176.96*
Traffic and Car Service Balances Receivable	712,374.97	939,821.33	*227,446.36*
Net Balances Receivable from Agents and Conductors	531,244.30	817,188.18	*285,943.88*
Miscellaneous Accounts Receivable	967,659.39	906,703.21	60,956.18
Materials and Supplies	1,915,909.51	2,060,175.26	*144,265.75*
Other Current Assets	10,016.30	19,691.54	*9,675.24*
Total Current Assets	$6,864,197.11	$8,045,274.12	.....
DEFERRED ASSETS:			
Working Fund Advances	$26,636.98	$27,315.71	*678.73*
Insurance and Other Funds	178,512.75	180,448.45	*1,935.70*
Other Deferred Assets	30,829.44	.....	30,829.44
Total Deferred Assets	$235,979.17	$207,764.16	.....
UNADJUSTED DEBITS:			
Rents and Insurance Premiums Paid in Advance	$575,319.60	$600,307.59	*24,987.99*
Other Unadjusted Debits	371,520.58	364,092.59	*7,427.99*
Total Unadjusted Debits	$946,840.18	$964,400.18	.....
Grand Total	$215,301,842.54	$217,041,025.49	*$1,739,182.95*

Liabilities

	1935	1934	Increase or *Decrease*
CAPITAL STOCK:			
Common Stock	$87,407,500.00	$87,407,500.00	.....
Less Held by Company	2,966,300.00	2,966,300.00	.....
	$84,441,200.00	$84,441,200.00	.....
Premium on Capital Stock	70,720.00	70,720.00	.....
Total Stock	$84,511,920.00	$84,511,920.00	.....
LONG TERM DEBT:			
Funded Debt Unmatured	$70,000.00	$70,000.00	.....
Less Held by Company	55,000.00	55,000.00	.....
	$15,000.00	$15,000.00	.....
Equipment Trust Obligations	4,652,000.00	4,053,000.00	$599,000.00
Non-Negotiable Debt to Affiliated Companies:			
Open Accounts	326,883.52	343,724.94	*16,841.42*
Total Long Term Debt	$4,993,883.52	$4,411,724.94	.....
CURRENT LIABILITIES:			
Grand Total	$215,301,842.54	$217,041,025.49	*$1,739,182.95*
Traffic and Car Service Balances Payable	531,537.28	1,123,109.11	*591,571.83*
Audited Accounts and Wages Payable	2,579,980.11	2,214,450.17	365,529.94
Miscellaneous Accounts Payable	20,397.66	184,179.21	*163,781.55*
Interest Matured Unpaid	24,174.06	450.00	23,724.06
Dividends Matured Unpaid	45,091.50	45,769.50	*678.00*
Unmatured Interest Accrued	5,483.99	6,266.34	*782.35*
Unmatured Rents Accrued	1,786,912.51	1,778,529.87	8,382.64
Other Current Liabilities	170,867.35	141,459.38	29,407.97
Total Current Liabilities	$5,845,180.71	$6,594,213.58	.....
DEFERRED LIABILITIES:			
Other Deferred Liabilities	$13,003,011.68	$13,147,702.96	*144,691.28*
UNADJUSTED CREDITS:			
Tax Liability	$3,336,847.37	$2,402,262.83	934,584.54
Insurance and Casualty Reserves	852,545.79	815,184.09	37,361.70
Accrued Depreciation—Equipment	38,870,144.14	38,804,612.87	65,531.27
Other Unadjusted Credits	2,125,602.10	1,159,823.50	965,778.60
Total Unadjusted Credits	$45,185,139.40	$43,181,883.29	.....
CORPORATE SURPLUS:			
Additions to Property Through Income and Surplus	$6,480,268.66	$6,584,410.56	*104,141.90*
Appropriated Surplus Not Specifically Invested	417,048.20	417,048.20	.....
Profit and Loss — Credit Balance	54,865,390.37	58,192,121.96	*3,326,731.59*
Total Corporate Surplus	$61,762,707.23	$65,193,580.72	.....
Grand Total	$215,301,842.54	$217,041,025.49	*$1,739,182.95*

* Pledged $913,000. Figures in italics denote decrease.

A general audit of the accounts of your Company and its subsidiaries as of the close of business December 31st, 1935, was made by Messrs. Haskins & Sells, Certified Public Accountants, and a detailed statement of the results of their investigations was submitted February 18th, 1936, with the following letter:

"Our audit (except for details that do not seem to us necessary) has covered the transactions of the company during the year ended December 31, 1935, and has found them to be correct. In our opinion, the methods employed and the safeguards surrounding all transactions are thorough and businesslike."

a further increase of 2½% effective January 1, 1935, and a final 5% increase effective April 1, 1935.

Operating comparisons were further disturbed during the year by large expenditures for restoration of property destroyed by floods in New York State, resulting from torrential rains on July 6 and 7, 1935. The United States Weather Bureau recorded a rainfall of 14.23 inches in thirty-eight hours. On the main line for a distance of 22 miles, between Painted Post, N. Y., and Kanona, N. Y., one or both main tracks, together with side tracks, were completely washed out, and three bridges, two at Bath, N. Y., and one at Kanona, N. Y., were put out of service, one of which was a total loss. Similar conditions but in a lesser degree, were encountered on the Syracuse and Utica Division for a distance of 18 miles between Chenango Forks, N. Y., and Marathon, N. Y., and 14 miles between Chenango Forks, N. Y., and Brisben, N. Y., as well as on the branch lines from Owego to Ithaca and from Cortland to Cincinnatus. Work of reconstruction was seriously retarded by the difficulties encountered in transporting material over almost impassable highways in the affected sections. Notwithstanding these handicaps against rapid restoration, the main line service was resumed July 14, 1935, and services on the Syracuse and Utica Division and other branch lines were fully restored by July 15. The cost of replacement, together with additional expenditures to protect bridges and roadbed against a recurrence of flood conditions in the stricken area, amounted to $721,370.

The increase in maintenance of way and structure expenses is fully accounted for by higher rates of pay and the replacement of roadway and bridges destroyed by the floods hereinbefore mentioned.

There were laid in replacement during the year 212,650 treated cross ties and 8,211 tons of new rail, practically all of which was 131 lbs. to the yard.

The policy of reducing maintenance cost and taxes by demolishing buildings and miscellaneous structures and abandoning tracks not in use nor needed in economical operation was continued during 1935. During the past six years your Company has removed, by demolition or other methods of disposal, 596 buildings, 45 miscellaneous facilities (such as ash pits, washing pits, turntables, track scales, water tanks, etc.), and during the same period 102.9 miles of track were abandoned and 32.9 miles constructed, or a net reduction of 70 miles of track.

Maintenance of equipment expenses were slightly less than in the preceding year. The reductions in cost of steam locomotive repairs and floating equipment repairs were, in a measure, offset by substantial increases in the charges to operating expenses for depreciation of freight cars and passenger cars brought about by the installation of additional new and rebuilt units and a change in method of computing depreciation charges ordered by the Interstate Commerce Commission effective January 1, 1935.

The total charge to operating expenses for accrued depreciation of equipment was $2,696,701, an increase of $159,247 over the previous year, and compares with average annual charges of $2,676,615 during the calendar years 1925 to 1929, inclusive.

Expenditures for repairs and renewals necessary to maintain

your Company's roadbed, structures and equipment in a good state of preservation and serviceability, were made during the year.

A comparison of transportation performance in 1935 with that of the previous year, measured by revenue ton miles and revenue passenger miles, follows:

	1935	1934
Revenue Ton-Miles	2,625,652,130	2,662,321,663
Revenue Passenger-Miles ..	423,783,439	429,765,249

Increase in transportation expenses amounting to $902,868 is accounted for by additional wages paid in 1935 over wages paid for like work in the preceding year as previously mentioned.

Payments for loss and damage to shipments in transit exceeded those of the previous year by $22,320. One of the major items of loss is pilferage of shipments in whole or in part while in transit. During the year 1935 special agents of your Company arrested 1,142 persons for felonies or misdemeanors and secured 936 convictions; 212 cases were awaiting trial at the close of the year and 2 were acquitted. All of these arrests, with one exception, were of persons not employed by your Company.

The ratio of loss and damage to the gross freight revenue of 1935 was .53% compared with .47% in 1934 and .37% in 1933.

Claims paid for injuries to employes and others were slightly more than in the previous year.

Your Company's indebtedness to the Railroad Credit Corporation was reduced during the year by cash payments of $275,000 and by the application of liquidation dividends amounting to $144,263, a total reduction in the Company's loans from that institution of $419,263. The original loan of $1,500,000 from the Railroad Credit Corporation has now been reduced to $680,736. Offsetting this indebtedness, there was due your Company from the Railroad Credit Corporation $721,319 account of advances under the plan adopted by the carriers in December, 1931.

The remaining units of equipment, new and rebuilt, financed through sale of Equipment Trust Certificates and uncompleted at the close of the year 1934, consisting of 2 new Diesel Electric Locomotives, 15 rebuilt Steam Locomotives, and 433 rebuilt Box Cars, were completed and placed in service during the year under review.

All other addition and betterment expenditures amounting to $1,541,460 were financed from current cash and no bank loans were incurred.

The Management desires to record its appreciation of the loyal and efficient services rendered by officers and employes during the year.

By order of the Board of Managers.

J. M. DAVIS,
President.

News (Railway Officers)

(*Continued from page 778*)

educated at the Massachusetts Institute of Technology, graduating with the degree of Bachelor of Science in 1923. He also took a course in railway transportation at the Harvard School of Business Administration during the summer of 1930. Mr. Perlman first entered railway service on June 8, 1918, with the Minneapolis, St.

Alfred E. Perlman

Paul & Sault Ste. Marie and served with various railroads during summer vacations from school. Following his graduation he entered the service of the Northern Pacific on July 7, 1923, as a construction draftsman. On July 11 of the following year he was employed as an extra-gang laborer, and on March 1, 1925, he was appointed inspector of icing facilities at St. Paul, Minn. In April, 1926, Mr. Perlman was appointed assistant supervisor of bridges and buildings at Glendive, Mont., and in November of the following year he was appointed roadmaster, with headquarters at Carrington, N. D., being transferred to Sandpoint, Idaho, in April, 1929, and to Staples, Minn., in December, 1930. He was assigned to special duties in the office of the vice-president in charge of operations in October, 1934, and in the following month he was loaned to the Railroad division of the Reconstruction Finance Corporation, where he made studies of maintenance conditions on lines making applications for loans. On June 1, 1935, he was appointed assistant engineer maintenance of way of the Chicago, Burlington & Quincy. His appointment as engineer maintenance of way of the Denver & Rio Grande Western was effective on May 1.

MECHANICAL

Howard Beattie, assistant district fuel supervisor, Eastern district of the Erie, with headquarters at Jersey City, N. J., has been appointed road foreman of engines, Buffalo division, with headquarters at Buffalo, N. Y., succeeding **P. R. Frisbee,** who has been transferred in the same capacity to the Allegany and Bradford divisions, with headquarters at Salamanca, N. Y. Mr. Frisbee succeeds **Lawrence Van Schaick,** who has been transferred to the New York division, with headquarters at Jersey City.

OBITUARY

William H. Sitterly, assistant chief car inspector for the Pennsylvania, with headquarters at Buffalo, N. Y., and chairman of the executive committee of the Niagara Frontier Car Inspection Association, died suddenly of a heart attack at his home in Buffalo on May 3.

H. Raynar Wilson, former well-known British signal engineer, died on April 19 in his 74th year. Mr. Wilson began his railroad career on the Midland, and was promoted to a place in the signal department in 1881. In 1889, when only 27 years old, he was appointed signal superintendent of the Lancashire & Yorkshire. In 1901, he resigned and became the British representative of the Hall Signal Company (New York), and was instrumental in the introduction of Hall automatic disk signals on the North Eastern Railway, in 1905. He visited this country a number of times. He was the author of the first comprehensive books on English signaling, issued in 1900-1905. He had been a frequent contributor to the Railway Gazette on signaling subjects.

Otto P. Byers, who built and operated a number of short railroad lines in Kansas, died on April 7 at Chicago at the age of 72 years. Born at Tampico, Ind., on May 2, 1863, Mr. Byers first entered railway service at the age of 15 years as a track laborer on the Kansas & Pacific (now part of the Union Pacific), later serving in various positions in the operating department. Mr. Byers next went with the Chicago, Rock Island & Pacific, serving first as a telegraph operator on new line construction and then as division freight agent. Subsequently, he left railway service to enter private business and it was while engaged in the coal business at Hutchison that he undertook the construction and operation of a number of short lines in Kansas, including the Wichita Northwestern and the Anthony & Northern (now part of the Wichita Northwestern) and several others.

William R. Davidson, general superintendent of transportation of the Grand Trunk Western (part of C. N. R.), died on May 2 at his home at Detroit, Mich., following a brief illness. Mr. Davidson was born on November 8, 1871, at Everton, Mo., and entered railway service in January, 1890, as a telegraph operator on the Missouri Pacific, later serving consecutively as a train despatcher, chief despatcher and trainmaster on this road. In March, 1911, Mr. Davidson went with the Grand Trunk (now amalgamated under the Canadian National) as a trainmaster, later being appointed superintendent and then general superintendent of the Western lines, with headquarters at Chicago. In 1922 he was transferred to Montreal and later served in the same capacity at Toronto, Ont. In 1924, Mr. Davidson was transferred to the lines west of the St. Clair river and later in the same year he was appointed assistant general manager, with headquarters at Detroit. In 1932 he was appointed general superintendent of transportation at Detroit, which position he continued to hold until his death.